

How to Promote Retirement Savings for Low-Income and Independent Workers:

The Cases of Chile, Colombia, Mexico and
Peru

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Labor Markets Division

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SUMMARY

The objective of this document is to understand the potential that voluntary savings has to increase pension coverage for low-income and independent workers in Chile, Colombia, Mexico, and Peru. It comprehensively reviews supply, demand, and institutional barriers to retirement savings, and presents possible cost-effective solutions to overcome these barriers. The framework of solutions proposed consists of behavioral tools, in addition to financial and technological innovations, with high potential for impact on the long-term savings of independent and low-income workers.

JEL CODES

D14 - Personal Finance.

D15 - Intertemporal Household Choice; Life Cycle Models and Saving.

D83 - Search; Learning; Information and Knowledge.

E21 - Consumption; Saving; Wealth.

D91 - Role and Effects of Psychological, Emotional, Social, and Cognitive Factors on Decision Making.

G23 - Non-bank Financial Institutions; Financial Instruments; Institutional Investors.

G53 - Financial Literacy.

J26 - Retirement; Retirement Policies.

H55 - Social Security and Public Pensions.

KEYWORDS

Mexico, Colombia, Peru, Chile, savings, retirement, old-age, self-employed, behavioral biases, behavioral tools, technology, information, solutions.

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Executive Summary

The low coverage of social security systems, particularly for independent and low-income workers, is one of the main challenges facing Chile, Colombia, Mexico, and Peru in the pensions arena. About 80% of low-income workers in Colombia, Peru, and Mexico do not contribute to pension schemes. The main reason for this disconnection from mandatory pension systems is that the vast majority of these workers do not have a formal job. Expanding social security coverage for low-income workers requires improving the way that labor market and pension systems function. However, this requires legislative reform and budgetary reallocation, which necessitate broad political consensus (Bosch, Melguizo and Pages, 2013).

One alternative is for individuals to save voluntarily to prepare for retirement. However, although the four countries all have voluntary savings pillars in their pension systems, there are still very few people who opt for this savings option, especially among low-income workers. Less than 7% of pension system affiliates in Chile have made any voluntary contribution, and among low-income affiliates (first quintile), this figure is 3%, according to the 2015 Social Protection Survey. This is the same in Mexico and Colombia, where only 6.8% and 5.7% of accounts managed by Retirement Fund Administrators (AFOREs) and Pension Fund Administrators (AFPs), respectively, have voluntary savings.

This document aims to investigate the potential of voluntary retirement savings to increase social security coverage for low-income and independent workers. To do this, barriers that explain the virtual nonexistence of voluntary pension savings in these countries are analyzed, and possible cost-effective solutions to overcome these barriers are explored.

Obstacles to voluntary savings include both demand and supply barriers. Demand barriers are factors that try to explain why workers do not seek to save for retirement. Supply barriers explore why suppliers do not offer viable retirement savings product for this group. Some barriers are part of human nature, such as an innate preference for the present, and others have to do with the low profitability of providing financial services to low-income workers, which makes them very unattractive for both suppliers and workers.

Faced with these barriers, we discuss two families of solutions. Some of these solutions are based on behavioral economics, which offers some answers to overcome the psychological biases that prevent saving. Others are based on technology and financial innovation, which make financial products accessible at a low cost. The key question is whether, in overcoming these barriers, scalable solutions and increased retirement protection can be constructed for the most excluded segments of the population.

Surmountable barriers

Saving for retirement is not easy for anybody. But it is much more difficult for workers with limited and irregular incomes. Demand barriers to voluntary pension savings refer to factors that inhibit retirement savings, such as insufficient or irregular income (ability to save), behavioral factors (behavior biases), a lack of knowledge of how to save or why it is important (financial education), or characteristics of savings products that are not adapted to preferences or needs.

The savings capacity of people in the region is limited (Cavallo and Serebrisky, 2016). Fifty percent of households in Mexico and Peru, as well as 70% in Colombia, have insufficient income to cover their expenses. Despite this limited average savings capacity, there are low-income households (first four deciles) that do have savings capacity. In numbers, 0.73 million low-income households in Colombia, 1.2 million in Peru, and 5.6 million in Mexico have savings capacity. However, most of these households also do not contribute to retirement due to behavioral biases, lack of information, or preferences. People are more likely to save to pay for education, to face emergencies and unforeseen events in the future, and to invest in a business, than they are to save for retirement. Old age is not among the main reasons to save.

At the same time, retirement savings products are poorly compatible with the circumstances and preferences of independent and low-income workers, mainly due to lack of liquidity, because they prefer to keep savings that they can have at any time to be able to respond to standard income fluctuations or emergencies. In Mexico, 40% of people say they cannot access their savings as quickly as in a bank, which discourages them from saving (CONSAR, 2016).

Sometimes, though, retirement savings products are either very difficult to access for this segment of the population or are simply not available to them. The supply barriers to voluntary retirement savings are those that limit the development of long-term savings products that adapt to the needs of vulnerable populations. An example of this type of barrier is the lack of commercial incentives for pension system actors such as AFPs, AFOREs, and other financial institutions. Furthermore, many vulnerable populations live in areas where collection and contribution networks are not developed.

Demand and supply barriers interact with each other, potentiating their effect. The low demand for retirement savings products from independent and low-income workers creates, in turn, supply barriers, and vice versa. Lack of knowledge about the pension system, retirement savings products, and basic financial concepts can also create distrust of financial institutions, authorities that regulate the pension system, and retirement funds. Similarly, pension system design and regulation can inhibit the supply of long-term savings products that adapt to the needs of vulnerable populations.

Overcoming these barriers in a scalable way means finding a group of measures that can be implemented within the existing institutional frameworks. These measures should be aimed at overcoming some of the barriers to saving, especially those associated with human behavior, such as behavioral tools and

technological and financial innovation. Ideally, these measures can be implemented immediately by regulators, employers, banks, pension fund managers, and fintech companies at a relatively low cost.

**DIAGRAM 1. BARRIERS TO AND SOLUTIONS FOR RETIREMENT SAVINGS
AMONG LOW-INCOME AND INDEPENDENT WORKERS**

PILLARS	BARRIERS	SOLUTIONS
OBLIGATORY	The labor market as the epicenter of the problem <ul style="list-style-type: none"> • High labor informality • High rotation between formal and informal employment • Elevated proportion of self-employed low-income workers • No obligatory contributions from self-employed workers in Mexico and Peru 	<ul style="list-style-type: none"> - Create formal employment - Redesign of pension systems
VOLUNTARY	Demand side <ul style="list-style-type: none"> • Limited savings capacity • Intrinsic characteristics of formal retirement savings products incompatible with individual needs (illiquidity) • Psychological factors (behavioral biases) • Lack of education related to personal finance and social security • Lack of a culture of social security rooted in sociocultural factors 	<ul style="list-style-type: none"> - Behavioral interventions - Financial and social security education
	Supply side <ul style="list-style-type: none"> • Lack of commercial incentives to reach self-employed and low-income workers <ul style="list-style-type: none"> - High collection costs for micro deposits - Insufficient reach of deposit networks in rural areas 	<ul style="list-style-type: none"> - Financial technology and innovation
CONTEXTUAL FACTORS	<ul style="list-style-type: none"> • Noncontributory pillars that are not integrated generate labor market distortions and can act as a disincentive for low-income workers to participate in the formal retirement savings system • Lack of trust in financial institutions 	<ul style="list-style-type: none"> - Integration of contributory and noncontributory systems - Financial and social security education

Source: Authors' preparation.

Behavioral interventions to increase retirement savings

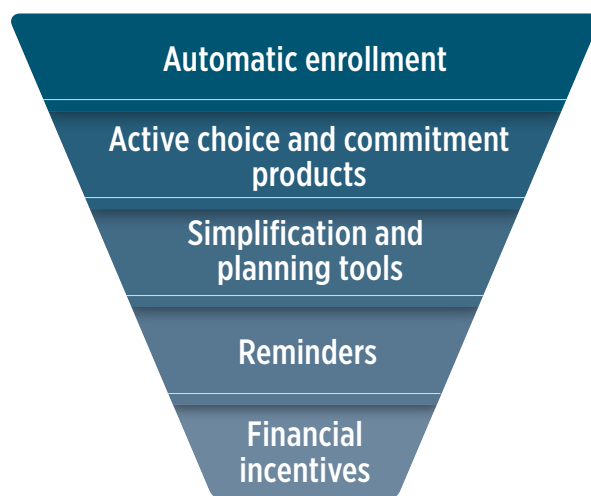
Behavioral sciences can help individuals overcome the barriers that prevent them from saving for retirement. Among the main tools are the following:

- **Simplify decision-making.** This can be done, for example, by reducing the number of options available, using simple examples of the consequences of each alternative (saving or not saving), or giving advice (Iyengar and Kamenica, 2010).
- **Reminders.** Simple reminders, sent at key moments through text messages or other means of communication, allow attention to be focused on the act of saving (Karlan et al., 2016).
- **Inform and create a positive mindset.** The way in which savings are presented is essential to ensure that individuals have a positive attitude toward old age and, therefore, view voluntary savings positively (Fertig et al., 2015).
- **Offer present-based incentives.** People tend to consider saving to be a sacrifice in the present without valuing the future reward. Offering small rewards in the present can increase savings (Volpp et al., 2008).
- **Set realistic deadlines.** Given the tendency to procrastinate, many times, individuals fail to achieve their savings goals. Setting deadlines for intermediate steps can help overcome this barrier.
- **Reduce transaction costs.** Small transaction costs that must be borne in the present may delay actions (Laibson, 1997). For example, expanding savings deposit points and offering automatic payments from a checking account, payroll, or credit card make it easy to save.
- **Pre-commit.** People can commit to saving in the future, for example, by automatic debit. This mitigates the problem of willpower, as well as the feeling of loss in the present that the act of saving creates.
- **Design default options.** The tendency to remain in the status quo can be overcome by designing a predetermined option (a default) that favors saving; for example, an action must be taken to stop contributing to a savings plan (Madrian and Shea, 2001; Choi et al., 2004).
- **Offer a mix of assets with different types of liquidity.** Non-liquid assets reduce the temptation to spend in the short term because liquidating them implies assuming transaction costs. That way, those who know they may be tempted to use money today can turn to traditional savings models to mitigate their willpower problems (Laibson et al., 1998). However, for the low-income population, having a portion of their savings accessible in case of emergencies increases the attractiveness of these products.

- **Minimize the feeling of loss.** Some programs seek to encourage savings through “rewards”, such as annual increases in income. This happens, for example, in the SMarT plan, developed by Thaler and Benartzi (2004).

International evidence shows that these tools vary in their level of effectiveness to increase the number of people who save for retirement and the amount they save (Madrian 2013, Choi, 2015). Measures that help people overcome inertia, such as designing default savings-friendly options, have been shown to be most effective, whereas those that help simplify information and remind people of the importance of saving are moderately effective. Favoring the present seems to be one of the most difficult barriers to overcome. Therefore, measures such as subsidies or matching contributions have a more limited effectiveness.

**DIAGRAM 2. EFFECTIVENESS OF BEHAVIORAL ECONOMICS TOOLS
TO PROMOTE SAVINGS (FROM MOST TO LEAST)**



Source: Madrian, 2013.

Given that people have various behavioral biases, developing measures that combine several of these principles may increase their effectiveness in favoring long-term savings.

It is important to keep in mind that behavioral economics works in the medium and long term, and its effectiveness may be enhanced with increased knowledge of social security systems and financial education tools. Therefore, it is essential that people understand how savings instruments work and what the components of the pension system are. This also helps to build trust and to let people know why it is important that they start saving consistently from the time they are young.

Unlike other policies, such as mandatory savings, behavioral tools maintain freedom of choice. Therefore, they are useful to help those who see their savings diminished by behavioral barriers, but not for those who see their savings diminished for other reasons, such as lack of savings capacity or lack of access to savings products that are appropriate to their needs.

Technological and financial innovations to increase long-term savings

Sometimes, the problem is not that people do not want to save but that doing so is not possible or is very complex or expensive. In fact, pension systems were not designed for independent workers. Therefore, a necessary condition for savings to occur is the existence of a viable savings product for this population, which requires financial innovation. In fact, such a financial innovation may, at times, be promoted by the government. For example, in Colombia, the government created the Periodic Economic Benefits (BEPS) program that allows savings based on income that is less than minimum

wage and irregular. On other occasions, innovations may reduce transaction costs. For example, nowadays, savings can be generated where independent workers bill for their services, consume, or pay public service providers or the state. Bringing long-term savings to people's daily lives opens the door to saving smaller amounts, which best fits the reality of low-income workers. Similarly, technological innovations can help promote long-term savings in regions disconnected from traditional systems by increasing collection networks in a cost-effective manner. Beyond retirement savings products themselves, technological innovations are necessary to implement the behavioral solutions described above. Behavioral tools, such as those described in this document, require new financial products. For example, a financial services provider that seeks to integrate self-commitment options into its products may generate a savings product that does not allow savings to be withdrawn before meeting a goal proposed by the same saver (Nava et al., 2006). Therefore, it is crucial to increase retirement savings that make use of technological innovations to reach an audience increasingly immersed in a digital world.

The combination of these behavioral, financial, and technological tools can potentiate them and generate multiplier effects to develop solutions that can become scalable, financially sustainable, and, ultimately, long-term public policies to help workers have enough savings for a dignified life in old age.

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I. Introduction

The low coverage of social security systems, particularly for independent and low-income workers¹, is one of the main challenges facing Chile, Colombia, Mexico, and Peru in the pensions arena. About 80% of low-income workers in Colombia, Peru, and Mexico do not contribute to pension schemes; a large portion of them are independent workers. To confront this problem, this document analyzes the main barriers to retirement saving that exist and explores a framework of solutions to increase social security coverage for these groups.

The rapid demographic transition of Latin America in recent decades, and the fiscal pressure of pension obligations, boosted the implementation of a multi-pillar pension system (noncontributory, mandatory, and voluntary), managed by the public and private sectors. Many countries in the region followed the Chilean pension system reform of 1981, which promoted a model of individual accounts managed by private Pension Fund Administrators (AFPs)². In Peru, pension system reform was carried out in 1993, followed by Colombia in 1994 and Mexico in 1997. In Colombia and Peru, however, a defined benefit system was maintained, which competes with the individual savings system.

In addition to the fiscal motivation³, the hope was that the implementation of a system of individual accounts administered by the private sector would generate other macroeconomic benefits, such as increased employment and productivity, higher levels of savings, and the development of local capital and financial markets, as well as an increase in pension coverage. The expectation was that, given that individual capitalization offers a clear connection between contributions and benefits, in the medium term, these stimuli would lead to an increase in the percentage of workers who contributed to the system and, therefore, the percentage of older adults with a pension.

However, more than 20 years after these reforms, the expectations of expanding pension system coverage have not materialized. On the contrary, independent and low-income workers remain the groups most excluded from formal retirement savings systems in the region. This is due to various barriers that range from the lack of integration of the noncontributory, mandatory, and voluntary pillars, to details of pension systems' design, to the functioning of labor markets, and to other supply and demand barriers for voluntary savings.

1. Defined as the first four income deciles.

2. The model was supported by the World Bank.

3. Bosch et al. (2013).

The largest barrier to saving is that the formal labor market is the main mechanism to generate pension savings in a context in which there are high levels of labor informality. Although salaried workers are required to contribute in all countries, in Colombia, Mexico, and Peru, between 30% and 60% of low-income employees are informal; that is, their employers do not pay their contributions to the social security system. In addition, those who do contribute are not saving enough because they rotate in and out of formal work arrangements. This decreases their contribution density, which makes it difficult for them to meet the eligibility criteria for accessing a pension and decreases the amount of the pension they will receive if they do access one. Most low-income workers are employed as independent workers, so they are not required to contribute, except in the case of Colombia, and, even in that case, the decision to contribute is virtually voluntary, as there is a lack of auditing contributions.

Given this reality, one alternative is for individuals to save voluntarily to prepare for retirement. However, although the four countries all have voluntary savings pillars in their pension systems, there are still very few people who opt for this savings option, especially among low-income workers. Less than 7% of pension system affiliates in Chile have made any voluntary contribution, and among low-income affiliates (first quintile), this figure is 3%, according to the 2015 Social Protection Survey. This is the same in Mexico and Colombia, where only 6.8% and 5.7% of accounts managed by Retirement Fund Administrators (AFOREs) and AFPs, respectively, have voluntary savings.

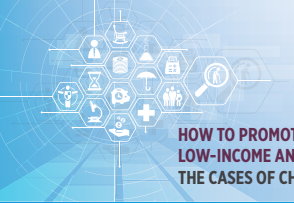
This document aims to understand the potential of voluntary retirement savings to increase social security coverage for low-income and independent workers. To do this, barriers that explain the virtual nonexistence of voluntary pension savings in these countries are analyzed, and possible cost-effective solutions to overcome these barriers are explored.

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Source: Authors' preparation.

Demand barriers refer to those factors that inhibit workers' retirement savings, either because they have insufficient or irregular income (savings capacity), because behavioral factors make it difficult (behavioral biases), or because they don't know how save or don't know that it is important (financial education). There are also intrinsic characteristics of retirement savings products, such as lack of liquidity, which make them poorly compatible with the circumstances of most independent workers in the four countries, particularly low-income workers. This hinders the accumulation of formal retirement savings, so demand for this type of product is reduced.



Supply barriers are those that limit the development of savings products that are adapted to the needs of vulnerable populations. One example is the lack of commercial incentives for pension system actors, such as AFPs, AFOREs, and other financial institutions. Another example is a lack of collection and deposit networks in areas where vulnerable populations are located.

Both types of barriers act at the same time, potentiating their effects. The low demand for retirement savings products from independent and low-income workers becomes a barrier to supply. In turn, the lack of knowledge about the pension system and basic financial concepts can generate distrust of the financial institutions that regulate the pension system and retirement funds. Similarly, the design of the pension system and its regulation can inhibit the supply of long-term savings products adapted to the needs of vulnerable populations.

All these barriers exist in the countries on which this document focuses: Chile, Colombia, Mexico, and Peru. To analyze these barriers in detail, this document uses a combination of primary and secondary sources of information. The quantitative information primarily comes from household surveys in the four countries, and the qualitative information is from a series of focus group sessions carried out by Novaster during 2017, commissioned by the International Association of Pension Funds Supervision (AIOS) and Inter-American Development Bank (IDB). Throughout the analysis, quotes from focus group participants are included to complement the household survey data.

Fully understanding the constraints faced by independent and low-income workers to save for retirement makes it possible to design a framework of solutions to increase pension coverage. Some of these barriers can be broken with pension and labor market reforms. Others are intrinsic to human nature, although they can be overcome with the help of behavioral economics tools, technology, and financial education. There is no single solution to the pension problem, but it is possible to increase coverage and integrate the most excluded segments of the population by combining public policies.

Proposals to improve retirement savings on the basis of behavioral economics use individual biases to facilitate, rather than hinder, savings (Fajnzylber and Repetto, 2019). This results in the implementation of measures that establish predetermined options favorable to savings, simplify decision-making, promote awareness of the importance of pensions, offer small rewards in the present for long-term savings, and set deadlines to reduce a propensity to procrastinate, among other strategies. People can have multiple biases simultaneously, so it is better to develop solutions that articulate several of these measures, making them more effective and favoring long-term savings.

Financial innovation is key to increasing retirement savings. Behavioral tools require new financial products to achieve their goal. For example, a financial services provider that wants to integrate self-commitment options can generate a savings product that does not allow savings to be withdrawn before meeting a goal proposed by the saver (Nava et al., 2006). Similarly, an automatic savings system designed for an independent or low-income worker can be conditional on income value, regardless of the dates on which income is received, and avoiding withdrawals from the accounts when funds are

very low. Finally, savings instruments can be generated that, despite being long-term, have flexible access for workers, as was done in Peru and Mexico.

Furthermore, technological innovation allows lower income segments to be served at a lower cost and, therefore, expands the coverage of pension systems. New technologies reduce transaction costs, allowing savings in the same places where independent workers bill their services, consume, or pay for public services. Bringing long-term savings to people's daily lives also opens the door to savings in lower amounts, which is more aligned with the reality of low-income workers and which usually does not occur due to high transaction costs. Additionally, technological innovations make it possible to capture long-term savings in regions disconnected from traditional systems because operating costs are significantly lower.

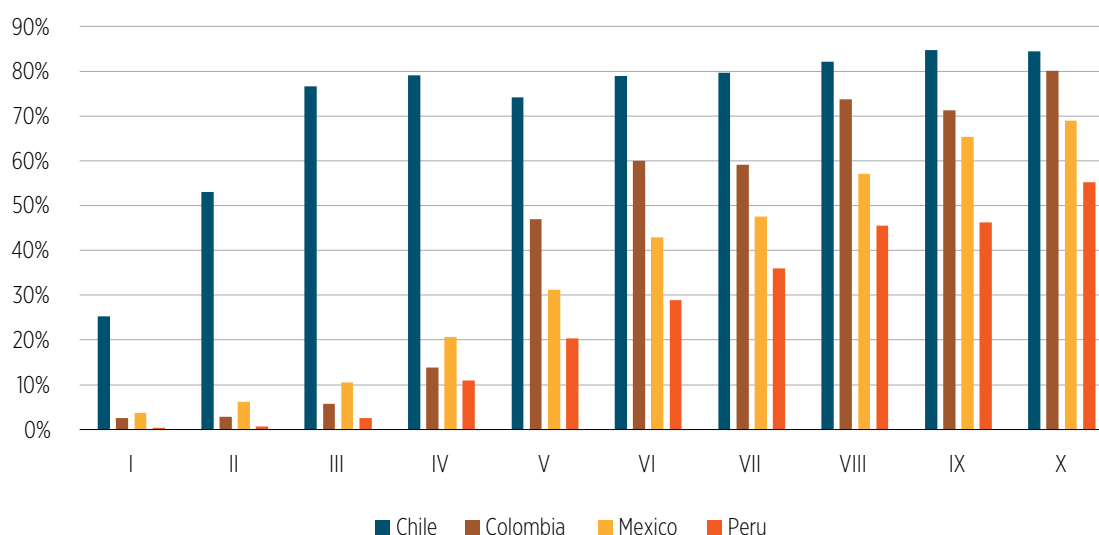
Both behavioral tools and financial and technological innovations are, in many cases, inexpensive and easily scalable. There is already a set of actions that, by becoming public policies, could increase the long-term savings of independent and low-income workers. The combination of several of these tools can have multiplier effects. Through scalable, financially sustainable, and long-term public policies, technological innovations and behavioral tools can help individuals who want to save for their future but fail because of the multiple barriers they face.

This document provides an extensive review of supply, demand, and institutional barriers to retirement savings, with an emphasis on Chile, Colombia, Mexico, and Peru. Additionally, some public policy proposals to mitigate these barriers are described. The second section demonstrates that the epicenter of low pension coverage is the labor markets of Chile, Colombia, Mexico, and Peru, which are highly informal and have a high percentage of independent employment. Therefore, it is important to understand the potential of voluntary retirement savings to expand coverage and amounts of pension savings. In the third and fourth sections, respectively, the demand and supply barriers to voluntary retirement savings are analyzed. Contextual barriers are addressed in the fifth section. Finally, in the sixth section, a framework of behavioral tools and financial and technological innovations with high potential for impact on the long-term savings of independent and low-income workers is proposed.

II. The labor market as the epicenter of the problem

Pension systems in Latin America and the Caribbean are based on formal salaried work, so labor market dynamics ultimately determine people's retirement savings capacity. This is because pension system design establishes mandatory worker-employer contributions of labor income (Bosch et al., 2013). In other words, the target group of social insurance is salaried workers. However, in Colombia, Mexico, and Peru, and, to a lesser extent, in Chile, there is limited creation of formal work, which is reflected in the low coverage of their pension systems. For example, in 2015, the percentage of workers who contributed to a social security system was 72% in Chile, 42% in Colombia, 35% in Mexico, and 25% in Peru.

FIGURE 1. PROPORTION OF FORMAL WORKERS AS A PERCENTAGE OF THE EMPLOYED¹ FROM 18 TO 64 YEARS, BY INCOME DECILE

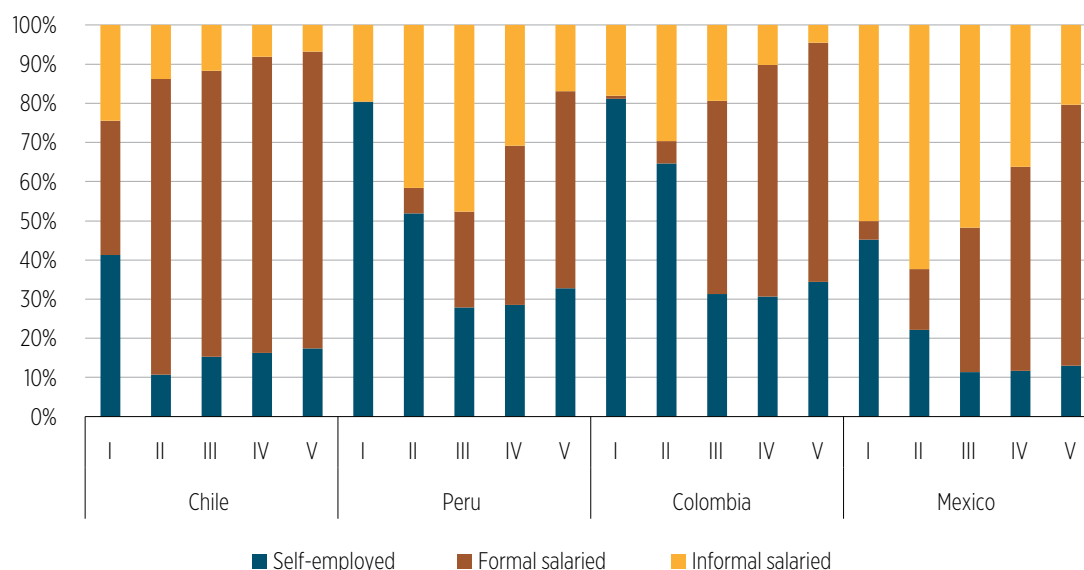


Source: Authors' preparation with data from Colombia (DANE, 2015), Chile (MDS, 2015), Mexico (INEGI, 2014), and Peru (INEI, 2015). Income deciles are estimated based on the monetary and nonmonetary labor income of employees, self-employed workers, and employers between 18 and 64 years old. ¹Does not include workers without reported income.

Beyond averages, the reality is that the lower part of the income distribution (the lowest earning 40% of workers) is disconnected from social security systems. Formal salaried employment is practically nonexistent in the first four deciles of income in Colombia, Mexico, and Peru, as it does not exceed 20% of those employed (Figure 2). In these countries, the low-income population is employed in informal jobs where they do not have social security. The only exception is Chile, where risk protection

(unemployment, accidents, illness, old age, and disability) reaches more than half of the low-income population.

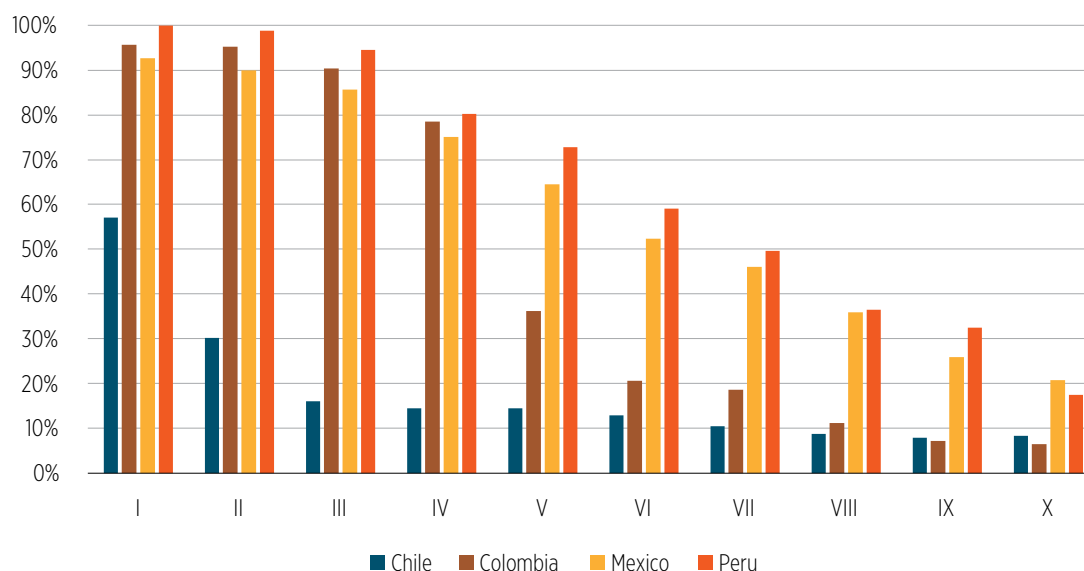
FIGURE 2. WORKERS BY TYPE OF OCCUPATION AND INCOME QUINTILE



Source: Authors' preparation with data from Colombia (DANE, 2015), Chile (MDS, 2015), Mexico (INEGI, 2014), and Peru (INEI, 2015). Income quintiles are estimated based on the monetary and nonmonetary labor income of employees, self-employed workers, and employers between 18 and 64 years old.

About 50% of salaried workers in Mexico, Peru, and Colombia work informally. For low-income workers, this percentage reaches 90% (Figure 3). This is because low-income workers are more susceptible to becoming trapped in the vicious cycle of labor informality described by Alaimo et al. (2015): Low human capital (insufficient and with a poor quality of education) results in low productivity that limits labor insertion in formal and well-paid jobs, which is why workers frequently work informally. Not being covered against work risks (unemployment, accidents, illnesses) keeps them vulnerable, and job instability prevents them from acquiring new skills that would allow them to increase their productivity and be employed in a better job.

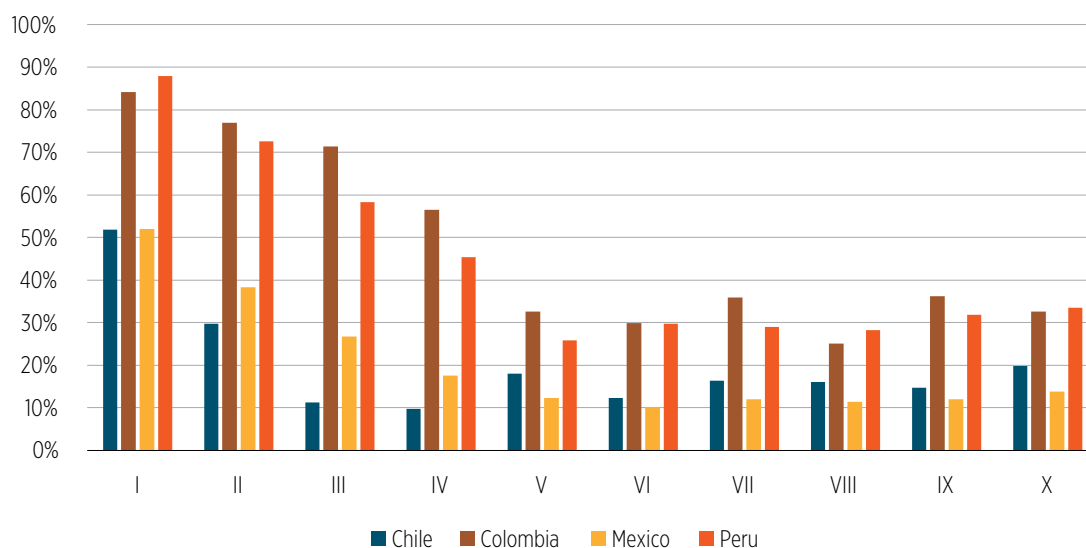
**FIGURE 3. PROPORTION OF INFORMAL SALARIED WORKERS AS A
PERCENTAGE OF ALL SALARIED WORKERS, BY INCOME DECILE**



Source: Authors' preparation with data from Colombia (DANE, 2015), Chile (MDS, 2015), Mexico (INEGI, 2014), and Peru (INEI, 2015). Income deciles are estimated based on the monetary and nonmonetary labor income of employees, self-employed workers, and employers between 18 and 64 years old. Does not include workers without reported income.

The population with the lowest income works independently to a greater extent (about 30% in Chile and Mexico and more than 60% in Colombia and Peru), relative to those with higher incomes (around 15% in Chile and Mexico, and 30% in Colombia and Peru), as shown in Figure 4. This is also due to lower levels of human capital and productivity among low-income people. Alaimo et al. (2015) explain that, although there are people who work independently because they have an entrepreneurial calling, many work independently by exclusion; that is, they would rather be a wage worker, but they cannot find a salaried job where they could earn more. This is because unproductive workers receive fewer job offers as wage workers and, therefore, are self-employed, even when the value of their product and their labor income is low. This explains why we observe a higher proportion of independent workers among the low-income population.

**FIGURE 4. PROPORTION OF SELF-EMPLOYED WORKERS AS A
PERCENTAGE OF WORKERS¹, BY INCOME DECILE**



Source: Authors' preparation with data from Colombia (DANE, 2015), Chile (MDS, 2015), Mexico (INEGI, 2014), and Peru (INEI, 2015). Income deciles are estimated based on the monetary and nonmonetary labor income of employees, self-employed workers, and employers between 18 and 64 years old. ¹Does not include workers without reported income.

Being an independent worker affects the ability of workers to save, especially for the long term. This is due to several factors. First, there is a strong correlation between having a low income and being an independent worker, which translates into less disposable income, which in turn limits the ability to save. Second, independent workers must face unpredictable events, as they are not covered against occupational hazards, so they may prefer to store their savings in liquid funds that allow them to respond to these events. Third, their income fluctuates, making it difficult to plan and save. Fourth, unlike salaried employees, they do not have an employer who deducts an amount from their income automatically to be used for saving.

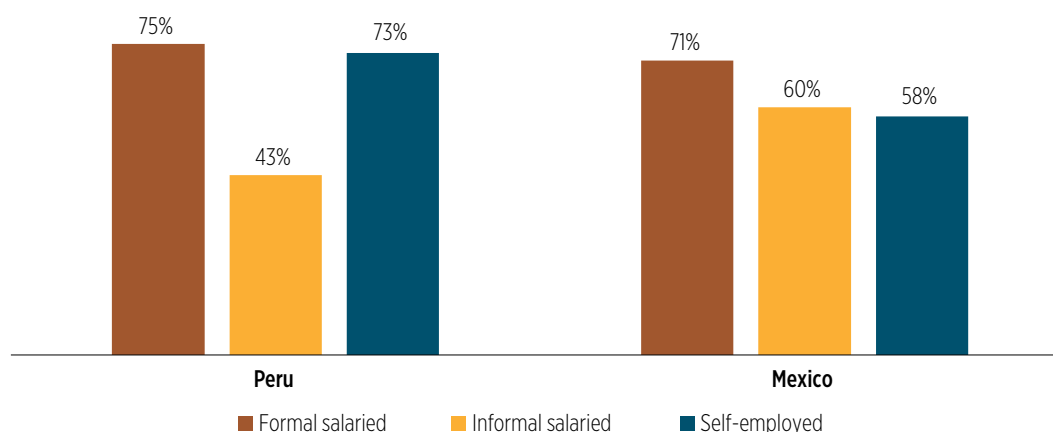
However, when there is mandatory legal registration of independent workers, this affects their coverage levels. Coverage of independent workers is greater in Colombia and Chile, where contribution is mandatory or is in a gradual process of becoming mandatory (between 14% and 19% of independent workers), compared to that of Mexico and Peru, where it is voluntary (less than 1% of independent workers). Even so, the rates are relatively low in countries where registration is mandatory. For example, in Chile, it was estimated that mandatory affiliation would contribute even further to increasing this group's social security coverage because 50% of independent workers state that they do not contribute precisely because it is not mandatory to do so, according to the 2015 Social Protection Survey.

Although formal low-income employees do not face as many barriers as independent workers, they are far from seeing the social security issue resolved. High labor turnover and transitions between formal, informal, and independent employment result in these workers experiencing considerable gaps in their employment and social security histories that affect both their ability to meet the eligibility criteria for receiving a pension and the amount they receive (Bosch et al., 2013). Although Chile has one of the most consolidated pension systems in the region, with 96% of men between the ages of 20 and 65 affiliated with the pension system, 38% contribute less than 50% of the time they could do so. In less consolidated individual capitalization systems, such as Peru and Mexico, the figure is even higher: 50% and 40%, respectively, of working age men never registered, and of those who did, 45% in Mexico and 49% in Peru contribute less than 50% of the time.

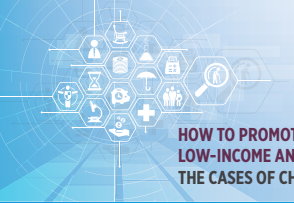
In Mexico and Peru, low-income workers are subject to high labor instability. As shown in Figure 5, between 25% and 29% of formal wage earners will not be at the same job after one year. On average, 13% will have become an informal employee, 9% will be unemployed or inactive, and 4% will have been employed as an independent worker. However, instability may be even greater because changes occurring within the same year are not observed. Alaimo et al. (2015) estimate that monthly labor separations in Latin America reach between 4% and 5% of total employment, more than double that in the United States, the Organization for Economic Cooperation and Development (OECD) country with the highest labor turnover.

Labor turnover in Mexico and Peru is even higher when it originates from informality, which demonstrates the precariousness and instability of these workers' conditions. On average, only 52% of informal wage earners will be at their same job after one year, 21% will be inactive or unemployed, another 22% will be self-employed, and only 5% will have moved to a formal job.

FIGURE 5. LOW INCOME WORKERS WHO, AFTER A YEAR, REMAINED IN THE SAME JOB



Source: Authors' preparation with data from Mexico (INEGI, 2014) and Peru (INEI, 2015).



Economic growth is associated with the ability to generate formal jobs. As an economy grows, the number of independent workers decreases. In this way, the low historical levels of growth in the region and the recent great recession explain, in part, the high level of self-employment in the four countries. The differences in accumulated growth may explain why Chile and, to a lesser extent, Mexico have a lower proportion of independent workers than Peru and Colombia.

In summary, low-income workers do not generate enough pension savings in the formal labor market in Mexico, Colombia, and Peru, and, to a lesser extent, in Chile. This occurs primarily because low-income workers are more likely to have jobs in the informal sector or as independent workers. Additionally, although they could save voluntarily, the reality is that they don't.

Voluntary retirement saving is scarce in the region, more so for independent and low-income workers. In Mexico, data from CONSAR (2018) reveal that only 6.8% of the accounts managed by AFOREs have voluntary savings. Similarly, data from the Financial Superintendence of Colombia (2017) indicate that only 5.7% of affiliates have voluntary contributions in Colombia. In Chile, according to the Social Protection Survey (2015), only 6.7% of affiliates have made some voluntary contribution to pensions, and only 3.3% of affiliates in the first income quintile. This phenomenon points to the existence of a series of limitations. The following section describes these barriers to demand and supply for retirement savings.

III. Demand-side barriers to voluntary retirement savings

Demand-side barriers refer to those factors that inhibit workers' retirement savings, either (i) because they have insufficient or irregular income (ability to save); (ii) because they want to save, but different behavioral factors make it difficult to do so (behavioral biases); or (iii) because they do not know how to save or why saving is important (financial education).

In addition, certain characteristics of the products themselves make them minimally compatible with the reality of most independent workers, particularly low-income workers, which reduces the demand for this type of savings products. One of the most important characteristics is lack of liquidity. In this section, each of these barriers is explored, emphasizing the four countries of interest.

Limited savings capacity

One of the key factors in the demand of voluntary pension savings products is that workers have savings capacity. In other words, workers must have higher income than expenses necessary to cover basic household needs. Analyzing this capacity is key, especially when it comes to low-income populations.

"I think the future will be really difficult (...) I've been looking for a steady job for three years (...) it's not my reality, I live with less than \$500,000 Chilean pesos (\$1,229 PPA dollars) per month, sometimes much less, and the savings capacity that I have is really low and suddenly a health issue comes up, like I just had, I just spent \$600,000 Chilean pesos (\$1,474 PPA dollars) only on health, so it's really difficult, really hard."

(Pedro, 30 years old, independent worker. Focus group participant in Chile⁴).

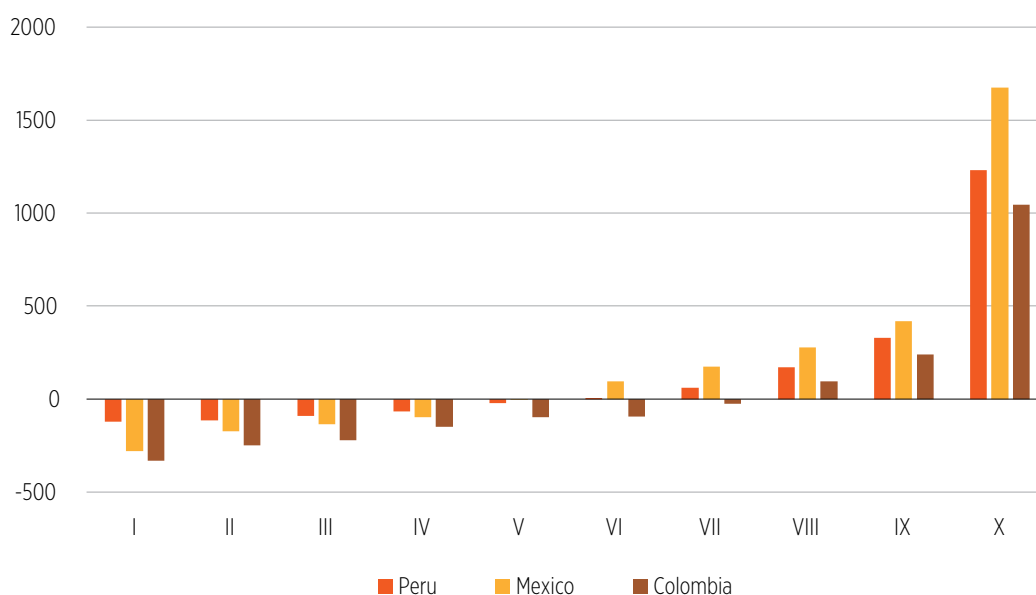
"Colombia has high living expenses, and there are other needs to cover before pensions, like food, transportation, etc."

(Patricia, 30 years old, independent worker. Focus group participant in Colombia).

4. Quotes from focus groups carried out by Novaster in Chile, Colombia, and Peru, commissioned by the International Association of Pension Funds Supervision (AIOS) and the Inter-American Development Bank (IDB), are incorporated. (Appendix 1 describes the focus group methodology). Participants' names were changed to protect their identity.

To estimate savings capacity, the monthly difference between net income and household expenses reported in the Income and Expenditure Surveys of households in Mexico and Peru and the Quality of Life Survey in Colombia were analyzed. This analysis shows that there is a clear positive correlation between the average income level and the savings capacity of households: the higher the income, the greater the capacity to save. Figure 6 shows that, in both Mexico and Peru, the average savings capacity is negative in the first five deciles of income, and up to the seventh decile in Colombia. That is, on average, 50% of households in Mexico and Peru, and 70% of households in Colombia, have insufficient income to cover their expenses, so they often resort to formal and informal credit mechanisms. In deciles VI, VII, VIII, and IX, the savings capacity is less than US \$500, whereas in decile X, it exceeds US \$1,000 on average.

FIGURE 6. AVERAGE SAVINGS CAPACITY IN INTERNATIONAL PPP DOLLARS BY INCOME DECILE



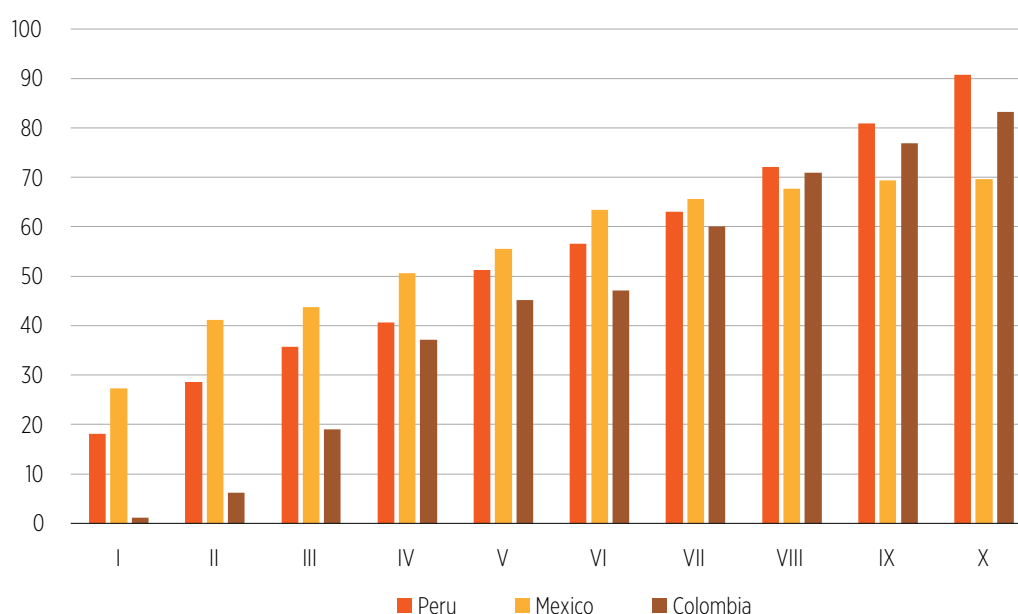
Source: Authors' preparation with data from Peru (INEI, 2015), Mexico (INEGI, 2014), and Colombia (DANE, 2014)⁵. Savings capacity is normalized as in Valles and Aguilar (2015) and is calculated by dividing monetary household savings by the square root of the household size, seeking to capture income economies of scale among household members.

5. Throughout this document we present figures at constant 2016 prices and converted to international US dollars with the World Bank Purchasing Power Parity (PPP) conversion factor (Peru 1.57, Mexico 8.57, Colombia 1,252.40, Chile 406.87).

These figures align with the perceptions of low-income workers: when asked why they do not save, most say that it is because their income is insufficient. In Colombia, 90% of low-income respondents indicated that they do not save because they do not have the money (CID, 2013)⁶.

However, a negative average savings capacity in the first income deciles does not mean that none of these households save. Figure 7 shows the percentage of households with positive savings (income greater than expenses) in each income decile. There are low-income households in all three countries that, at the end of the month, manage to retain an income surplus: in Mexico, the proportion of households, in the first income decile, with a positive saving capacity is 27%; in Peru, this proportion is 18%; and in Colombia, this figure is not even 2%. The percentage of households with savings capacity increases as household income increases.

FIGURE 7. PERCENT OF HOUSEHOLDS WITH SAVINGS CAPACITY BY INCOME DECILE



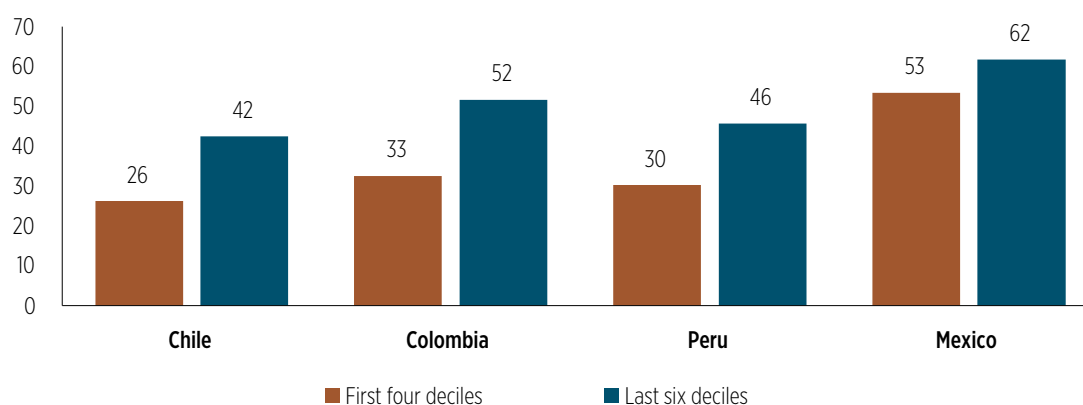
Source: Authors' preparation with data from Peru (INEI, 2015), Mexico (INEGI, 2014), and Colombia (DANE, 2014). Savings capacity is normalized as in Valles and Aguilar (2015) and is calculated by dividing monetary household savings by the square root of the household size, seeking to capture income economies of scale among household members.

6. Survey to identify the sociodemographic profile of the urban-rural population subject to the BEPS program prepared by COLPENSIONES and the Development Research Center of the National University (CID).

Despite the limited savings capacity of low-income people, about 0.73 million households in Colombia (16% of total households in the first four deciles), 1.2 million households in Peru (30% of total households in the first four deciles), and 5.6 million households in Mexico (40% of total households in the first four deciles) have savings capacity. These figures are not marginal and align with people's self-reported savings behaviors. When asked if they saved in the last 12 months, between 26% and 53% of low-income people in Peru, Mexico, Colombia, and Chile say that they do (see Figure 8). As household surveys show, middle- and high-income people report saving more, which squares with their having greater savings capacity.

The regularity and certainty with which income is received affects the ability to save. Valles and Aguilar (2015) find that, controlling for income and other socioeconomic characteristics of households, having a formal job positively and significantly affects the ability to save. The authors explain that this is because, in addition to the automatic and mandatory nature of the contributions, formal employment implies greater certainty about the future flow of household income.

FIGURE 8. PERCENTAGE OF THOSE SURVEYED WHO REPORT SAVING OR PUTTING ASIDE MONEY IN THE LAST 12 MONTHS



Source: Authors' preparation with data from the Global Financial Inclusion database (World Bank, 2014). Method of savings is not specified.

To this point, the focus has been on the savings ability of low-income people, generally. However, it is important to acknowledge that there are different reasons for saving and, in a context of limited resources, different needs compete. The main reason that low-income people save is for education, followed by savings intended for use in response to emergencies and unforeseen future events, to invest in a business and, finally, for old age (Figure 9).

"I would like to save, but I don't see it as a priority right now". (Vivian, 36 years old, independent worker. Focus group participant in Colombia).

"I save with my husband, to buy an apartment, but not for a pension". (Angela, 24 years old, independent worker. Focus group participant in Peru).

"If they gave the option to withdraw money from your contributions for some emergency. That would be a really good hook and people would seriously fall back in love with the system". (Claudio, 35 years old, independent worker. Focus group participant in Chile).

"Basically, I'm not saving for old age. Everything I make I spend on the university and supplies". (Andrea, independent worker. Focus group participant in Colombia).

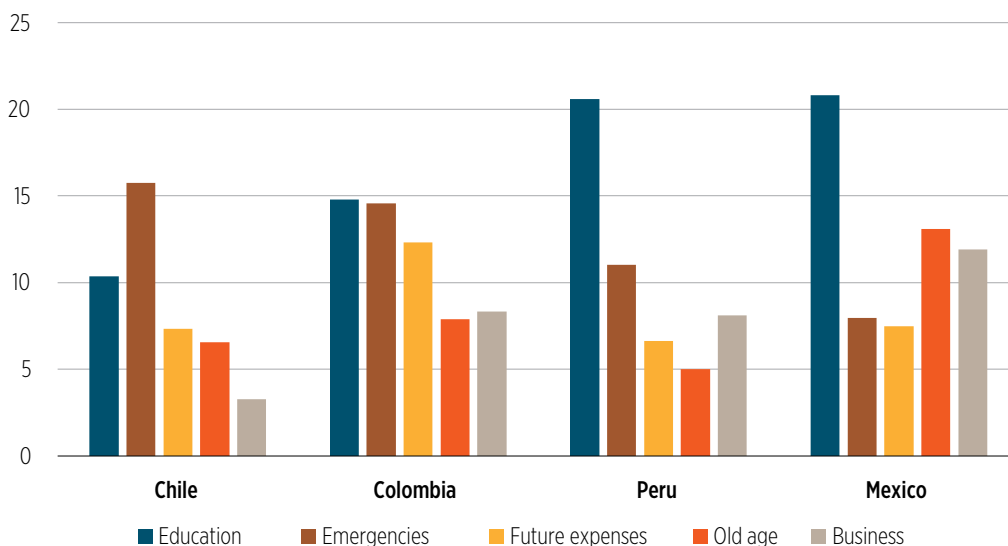
"A year ago, I bought some land in Puerto Varas (...) I don't contribute and with the money I saved for six years, now I have land". (Carmen, independent worker. Focus group participant in Chile).

"I don't like to contribute because I have other hopes, like saving for my own business". (Eduardo, independent worker. Focus group participant in Colombia).

"I like to enjoy money a little more and also save it. I have a savings account, I don't know if it's really for my old age, but I'm more worried about the future of my unborn children". (Sandra, 27 years old, independent worker. Focus group participant in Chile).

Unsurprisingly, then, retirement savings is not a priority for low-income people, given that many live hand-to-mouth. For them, retirement is on the furthest horizons; it is less urgent than other, more immediate, financial imperatives associated with emergencies, housing, education, business, or even debt repayment. In fact, for low-income individuals and families, long-term saving to finance a pension may not represent an optimal decision. If a household begins to have savings capacity beyond subsistence level, perhaps its most efficient use is as an investment in more and better education, for adults and children; it may be most prudent to use savings for health, or to subsidize the purchase of a home (Bosch et al., 2013).

FIGURE 9. SAVING MOTIVATIONS OF LOW-INCOME PEOPLE



Source: Authors' preparation with data from the Global Financial Inclusion database (World Bank, 2014). Note: Percentages can add up to more than 100%.

Analyzing how savings capacity varies by a worker's age also furnishes clues about the various factors that impact retirement savings. The nature of compound interest makes it critical for workers to begin saving for retirement while they are entering the labor market. However, at the beginning of their careers, workers' inexperience means that they have low salaries, relative to those they will attain with the accumulation of experience. Additionally, in their relative youth, workers face more expenses, due to childrearing and asset-building; this results in a lower savings capacity. That is, the ability to save is particularly low at the most crucial to maximize long-term savings; thus, savings capacity increases as workers get older.

To summarize, low-income people face strong budgetary constraints that limit their ability to save. However, between 16% and 40% of these households have savings capacity and also report that they do. However, within the context of this savings capacity, retirement savings competes with other, more immediate, needs and is usually not preferred, especially among young people.

Illiquidity of retirement savings

Liquidity restrictions play a big role in keeping pension savings low, because such illiquidity makes this kind of long-term saving particularly unattractive for this segment of the population. All countries impose restrictions on early withdrawal of mandatory pension savings accumulated in a worker's individual account. The same restrictions apply to voluntary pension savings funds; although such voluntary funds tend to be more liquid, there are also penalties for early withdrawal.

These liquidity restrictions on pension savings are necessary to keep people committed to saving for a dignified old age. However, such restrictions can, in fact, be too restrictive, given that the economic reality of independent and low-income workers is characterized by high income instability, which in turn decreases the demand, among the low-income population, for long-term savings products.

“And the time to get the benefits that come after what you imposed your whole life. I always have [sic] to get to 60, 70 years old so they just give you a pension and what happens if I don’t live that long”. (Gustavo, 48 years old, independent worker. Focus group participant in Chile).

“I’m not going to contribute (...) My mother is a university professor, she has 190 million Chilean pesos (\$466,976 PPA dollars) in her pension account, she retired, she’s 67, and I had an accident (...) and we need money, and how is it possible that it’s your life savings and you can’t manage it (...) When my mother dies, we can’t inherit the money”. (Claudio, 35 years old, independent worker. Focus group participant in Chile).

“The ability to manage your money, if at a basic level they gave you the option to withdraw it, or when you get it, you manage it one way or another”. (Carmen, independent worker. Focus group participant in Chile).

The rules concerning early withdrawal or partial withdrawal of pension funds in the four countries show that these products share a certain degree of illiquidity (Table 1). Independent and low-income workers prefer to keep savings that can be used at any time, to facilitate consumption and quality of life over time. For example, 40% of those interviewed by CONSAR, in 2016, mentioned that the inability to withdraw the savings from their individual account as quickly as from a bank discourages them from making voluntary contributions to their AFORE⁷. In addition, in many cases, independent workers need short-term or medium-term savings to sustain and reinvest in their companies to ensure that they remain competitive in the market.

Given these economic needs, the illiquidity of pension savings observed in the four countries, and, especially, in Chile, Colombia, and Peru, represents a characteristic that has not been adapted to the reality of independent and low-income workers in these countries, for whom pension savings often represent the only savings available for use in emergencies. In this context, it may be a better strategy to rely on a standard savings account, which offers much less restricted access to resources.

7. CONSAR 2016 survey: Factors that promote voluntary savings among Mexicans.

TABLE 1. VOLUNTARY SAVINGS CHARACTERISTICS

COUNTRY	SAVINGS METHOD	PREREQUISITES TO CONTRIBUTE TO VOLUNTARY SAVING	ADVANCE WITHDRAWAL	REQUIREMENTS FOR ADVANCE WITHDRAWAL	PENALTY FOR ADVANCE WITHDRAWAL	COSTS AT WITHDRAWAL
Chile		- Contribution to the mandatory regime.	✓	-	✓	Tax between 3% and 7%
Colombia	Unique	- Belong to the Individual Savings Regime (RAIS).	✓	-	✓	Loss of fiscal benefits if the withdrawal is made before the 5-year vesting period has elapsed.
Mexico	Short-term Savings	- Have an open and registered individual retirement savings account.	✓	After 2 to 6 months, depending on the AFORE	✓	Income tax on capital gains
	Medium-term Savings	- Have an open and registered individual retirement savings account.	✓	Before 5 years of saving	✓	29% income tax at withdrawal
			✓	After 5 years of saving	X	20% income tax on worker's annual earnings
	Long-term Savings	- Have an open and registered individual retirement savings account.	X	-	-	20% income tax if withdrawn before the accountholder is 65 years old.
Peru	Voluntary Contribution with a Social Security Purpose	- Make obligatory contributions. - In the case of self-employed workers, voluntary contributions cannot exceed obligatory contributions.	X	-	-	-
	Voluntary Contribution without a Social Security Purpose	- Make obligatory contributions. - 5 years in Private Pension System (SPP).	✓	Unlimited withdrawals	X	-

Table 1 describes the barriers to entry for independent workers to make voluntary retirement savings deposits in Chile, Colombia, and Peru. The Chilean system requires independent workers to comply with contributions to the mandatory system before allowing them to voluntarily save in the formal pension system. This makes it less likely that workers can save an amount commensurate with their capacity, which may be less than what is required by the mandatory regime. In Peru, the barrier to entry is even greater, because it requires workers to have been affiliated for at least five years, discouraging voluntary savings of workers who have just joined the formal labor market. Additionally, it sets a ceiling on the amount that can be voluntarily saved, by requiring that amount not to exceed the amount of the mandatory contribution.

In Chile, early withdrawals from Voluntary Pension Savings (APV) are allowed at any given time. These early withdrawals, however, are penalized by a tax, ranging from 3% to 7%⁸. It is important to mention that APV is only an option for workers who have already contributed under the mandatory pension savings scheme (10% of the worker's taxable income), and only for as long as the accumulated capital in the worker's account is sufficient to finance a pension exceeding 80% of the Maximum Pension, with matching contributions, and has reached a replacement rate of 70% of income from the 10 years prior to retirement.

In Colombia, partial or complete withdrawals of voluntary pension savings can be made at any time, although such funds are only eligible for tax benefits if they have vested for at least five years, are used to purchase housing, or if the individual is already eligible to retire. This option exists only for workers in the Individual Savings with Solidarity Regime (RAIS), and not in the Average Premium Regime (RPM). For lower-income workers, the Colombian government has created the BEPS program as an alternative voluntary savings system for old age (not a pension, because, in Colombia, by law, pensions cannot be less than the legal minimum wage). This program promotes retirement savings that are based on income lower than a minimum wage and irregularly received; it also does not have a minimum number of contribution weeks required to receive future benefits. In addition, it offers a 20% subsidy on the total amount saved, upon reaching the minimum retirement age, but the funds accumulated in this program cannot be withdrawn at any time before this point⁹.

Unlike in Chile, in Mexico, workers can make voluntary retirement savings contributions, regardless of their mandatory contributions, and can also make partial withdrawals from their mandatory savings in the event of marriage or unemployment. Voluntary pension savings can be withdrawn within two to six months after the deposit, if it is short term, or after five years, if it is medium term, and until retirement age, in the case of long-term savings. Workers must pay a 20% tax on capital gains when they withdraw this money, which is treated like any other capital gain. In addition, every five years, newly unemployed workers have the right to withdraw funds from their mandatory savings. The amount

8. [http://www.bcn.cl/leyfacil/recurso/ahorro-previsional-voluntario-\(apv\)](http://www.bcn.cl/leyfacil/recurso/ahorro-previsional-voluntario-(apv))

9. 62 years old for men and 57 years old for women.

depends on their base salary for contributions, and the requirements to obtain it vary, depending on whether workers are affiliated with the Mexican Social Security Institute (IMSS) or the Institute of Social Security and Services for State Workers (ISSSTE). In the event of marriage, workers can also make a partial withdrawal equivalent to 30 days of the mandatory savings' minimum salary. This is only permissible if the worker is paying into the IMSS system at the time they request the withdrawal and has been contributing for at least 150 weeks.

In Peru, there are two ways to save voluntarily in the AFPs: voluntary contributions with a social security purpose and without a social security purpose. Contributions without a social security purpose are liquid and may roll over to become contributions with a social security purpose. To make contributions without a social security purpose, the accountholder must be enrolled in the Private Pension System (SPP). To make voluntary contributions with social security purposes, the accountholder must be affiliated with the SPP and, in the case of independent workers, voluntary contributions cannot exceed the mandatory ones.

To summarize, there are two important disincentives for voluntary pension savings among low-income workers: high barriers to entry and lack of savings liquidity. These restrictions are, from a theoretical point of view, desirable. Based on such restrictions, public policy makers aim to make workers contribute a minimum percentage of their income and leave savings in their accounts to achieve a replacement rate that protects them from poverty during old age. However, it doesn't really work that way. Asking independent and low-income workers to contribute a minimum percentage of their income (mandatory savings) removes the possibility of their saving a small amount, which would be more in line with their savings capacity. The same problem manifests on account of the extreme illiquidity of retirement savings, which reduces the attractiveness of this kind of savings. Liquidity of retirement savings can also help build trust in formal financial institutions and pension fund managers.

Fiscal incentives for voluntary retirement savings products

Fiscal incentives are the main measure to “compensate” for voluntary retirement savings' lack of liquidity and improve its attractiveness, compared to other savings alternatives in Chile, Colombia, and Mexico¹⁰. In Chile, under the Tax on Savings Regime, the saver does not pay taxes on voluntary contributions; rather, taxes are only imposed on capital gains. Under the Withdrawal Tax Regime, no taxes are paid when saving, because contributions are reduced from the tax base. When funds are withdrawn from the AFP or another authorized institution, 15% of the withdrawal amount is retained as a single tax. In Colombia, contributions to the Voluntary Savings Fund become a discount on the worker's taxable income base, up to a maximum of 30% of the worker's annual income, and withdrawals are tax exempt once the saving in the account has vested for at least five years. In Mexico, voluntary

10. Voluntary contributions without a social security purpose in Peruvian AFPs do not have fiscal incentives.

pension savings contributions can also be deducted on annual tax returns; to retain this benefit, the savings must remain in the worker's AFORE account until that worker turns 65¹¹.

By definition, only workers who pay or file their income taxes can capitalize on the fiscal incentives of voluntary retirement savings. This is to say that such incentives are virtually restricted to formal workers. Fiscal incentives are therefore very unattractive to the vast majority of workers in the three countries, who pay reduced or no taxes, either because they are exempt from doing so because of their low income, or because they evade that obligation. To give an idea of the scale the problem, in Chile, in 2013, for example, only 18% of the working-age population earned an income equal to or greater the amount that would require them to pay income taxes. Moreover, of those people who are required to pay taxes, 46% evade these obligations (OECD / CIAT / IDB, 2016).

Psychological factors: Behavioral biases and cognitive limitations

The classic life cycle model of economic literature assumes that people plan their consumption and savings patterns throughout their lives, trying to stabilize the amount of assets available to them at any given moment. This idea can explain, for example, the tendency of individuals to accumulate assets during their working lives and use these assets once they are retired. The model is based on the assumption that individuals make their decisions rationally, using all available information and displaying preferences that are consistent over time, regardless of the person's context.

However, a growing body of evidence, based on psychology and cognitive science, has shown that the assumption of individuals' rationality often does not apply to economic decision-making, especially when it relates to saving and consumption. Rather, the evidence suggests that individuals are usually driven by behavioral biases and the use of heuristics in making such decisions. These biases and heuristics can result in optimal decisions, but often lead to distortions, illogical interpretations, and, therefore, to harmful decisions in the field of personal finance.

11. <https://www.gob.mx/consar/articulos/beneficios-fiscales-del-ahorro-voluntario>

(About old age) *“I haven’t evaluated it consciously, I think because I’m 37 so maybe I think that I still have time, why am I going to worry about something that will happen in many years, and let’s say, don’t have a lot of financial tools either, for someone to say wow I’m going to do this”.* (Mónica, 37 years old, independent worker. Focus group participant in Chile).

(Would they like to save?) *“Not now, but I would like to save because the years go by and I don’t have a lot of savings”* (Katherine, 32 years old, independent worker. Focus group participant in Peru).

The following summarizes four of the most important behavioral biases that explain low voluntary retirement savings rates. Evidence is also provided regarding the empirical magnitude of these psychological phenomena for the four countries of interest. Finally, it describes how poverty conditions can aggravate the negative consequences of these biases and heuristics, and then moves on to discuss their implications in the selected countries.

A. Present bias

Present bias describes the tendency of people to overvalue benefits that are obtained today, or in the near future, well above those achieved in a remote future (Laibson, 1997; O’Donoghue and Rabin, 1999). This bias manifests in self-control problems and a tendency to postpone decisions that have a certain cost in the present but offer significant long-term benefits. That is the case of retirement savings (Choi et al., 2002; Thaler and Benartzi 2004; Karlan et al., 2014). This bias can also explain the preference of many people to maintain the status quo (inertia).

“I think that if someone worries less, they’re probably also irresponsible, to not worry about when someone is going to be old because they think it will take a while, but it never slows down”. (Ana, 52 years old, independent worker. Focus group participant in Chile).

“In 13 more years, I have to retire, but I still think it’s far away”. (Carlos, independent worker. Focus group participant in Chile).

The prevalence of present bias has been demonstrated in several empirical studies, many of which applied to people's decisions regarding retirement savings. For example, Madrian and Shea (2001) show that the participation in and allocation of contributions to retirement savings plans among workers in the United States is very sensitive to defaults in the enrollment process.

(Why not contribute?) *"They don't tell you what the process is for independent workers"*. (Antonia, 32 years old, independent worker. Focus group participant in Peru).

Frisancho (2016) presents representative data on temporal preferences of urban populations in Mexico, Peru, and Brazil. According to their estimates, about 40% of the urban population of Peru and Mexico (Table 2, gray boxes) can be considered to have inconsistent temporal preferences; that is, their preferences for decisions made in the present differ from their preferences for decisions made in the future. A quarter qualify as hyperbolic discounters (Table 2, light gray boxes); that is, they display high rates of impatience and value present consumption much more than they value the consumption they may pursue in the future. Frisancho (2016) also shows that being biased toward the present is negatively correlated with the probability of saving. For example, in Peru, people who discount time hyperbolically are 24% less likely to save than people who have patience. In Mexico, such individuals have a higher probability of being overindebted than patient people.

TABLE 2. TIME INCONSISTENCY IN PERU AND MEXICO

		6 vs. 7 months			
		Patient	Somewhat impatient	Very impatient	Total
Today vs. in one month	PERU				
	Patient	31.4%	6.0%	3.9%	41.3%
	Somewhat impatient	9.6%	8.6%	3.1%	21.3%
	Very impatient	9.9%	6.9%	20.6%	37.4%
	Total	50.9%	21.5%	27.6%	100%
Today vs. in one month	MEXICO				
	Patient	42.8%	4.0%	2.3%	49.1%
	Somewhat impatient	11.8%	7.2%	1.3%	20.3%
	Very impatient	13.8%	4.9%	11.9%	30.6%
	Total	68.4%	16.1%	15.5%	100%

Source: Frisancho (2016). All decisions not in the diagonal are considered inconsistent.

B. Social preferences

The literature on behavioral economics has also shown that other community members' decisions about saving and investment affect individuals' decisions. For example, savings and investment decisions can depend on decisions made by family members or co-workers (Brown et al., 2008; Duflo and Saez, 2003; Grinblatt and Keloharju, 2001; Hong, Kubik and Stein, 2004). Communication, such as observational learning, as well as direct and indirect social pressure –for example, the implicit desire for compliance, acceptability, and social identity– can have a powerful impact on decision-making (Bikhchandani, Hirshleifer and Welch, 1998).

“More than anything there’s a cultural issue, my parents are humble people who were always independent and never got a pension and maybe this becomes inherited”. (José, 43 years old, independent worker. Focus group participant in Colombia).

“I think that it’s something cultural, my parents never contributed to pensions, the idea was that saving is living off of their apartments and savings, and I think the same thing”. (Montserrat, independent worker. Focus group participant in Colombia).

In this sense, it is important to consider the social norms and preferences that hinder pension savings in the region, and the extent to which they are reinforced through the social diffusion described. In this context, two particularly important trends may be low confidence in financial systems (Cavallo and Serebrisky, 2016) and high social pressure to share income and assets among families (Baland, Guirkinger and Mali, 2011), both of which may, on many occasions, cause people to consume or transfer, instead of save.

“The world of the pension funds is kind of gray. Their name looks very tainted”. (Patricio, 26 years old, independent worker. Focus group participant in Chile).

“So much corruption means that people don’t take pension institutions seriously”. (Natalia, independent worker. Focus group participant in Colombia).

C. Over-optimism and lack of probabilistic analysis

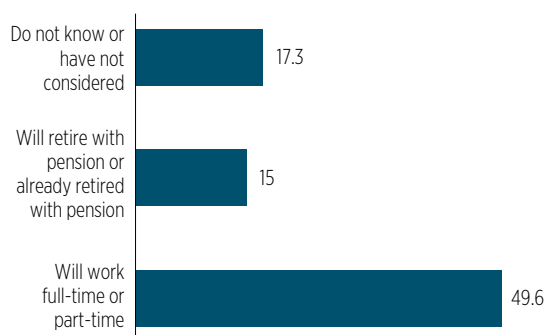
Another important behavioral bias is people's tendency to miscalculate probabilities, particularly the possibility of negative events happening throughout their lives. This relates to a tendency to be over-optimistic, which manifests in an exaggerated confidence in one's own abilities or certain aspects of the environment one faces and in taking excessive risks. An example is the fact that, on surveys concerning people's financial skills, respondents tend to overestimate their abilities, before realizing that they are, in fact, less capable (Lusardi and Mitchell, 2014).

(How do they think they will live in old age?) *"I see myself with a hardware store, a solid business".* (Paul, 26 years old, independent worker. Focus group participant in Colombia).

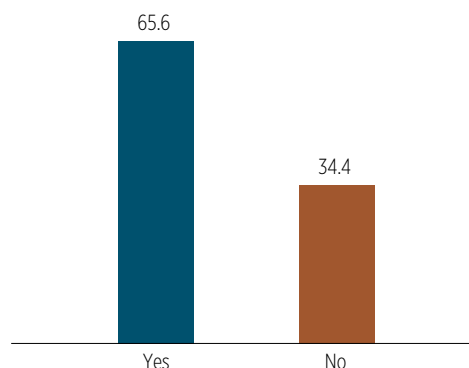
"With what I make, I already have good savings. So, I'm not afraid of what might happen to me in the future". (Cristina, 26 years old, independent worker. Focus group participant in Chile).

In Latin America, one manifestation of people's over-optimism in the context of retirement savings emerges when they are asked about their strategies to ensure a dignified old age. For example, some surveys show that a high percentage of Latin Americans plan to continue working after the age of retirement to finance their old age. This is the case, despite evidence that only a small minority of people will enjoy the health conditions necessary to do so. For example, 50% of people of working age, consulted in the Social Protection Survey (EPS) of the Chilean *Subsecretaría de Previsión Social* (2015), expect to continue working after their retirement age, but, in fact, 66% of pensioners report having stopped working, due to health problems (Figures 10 and 11). Failure to find a job after that age is another reason that they may not continue working after their retirement age.

**FIGURE 10. WORKING AGE POPULATION:
PLANS AT RETIREMENT AGE (CHILE)**



**FIGURE 11. RETIRED POPULATION:
HEALTH PROBLEMS AS THE REASON TO
NOT CONTINUE WORKING (CHILE)**



Source: Authors' preparation with data from *Subsecretaría de Previsión Social*, 2015.

D. The cognitive burden of poverty

Poverty and lack of economic resources make people even more susceptible to the aforementioned behavioral biases, according to research in the field of behavioral economics¹². In an important study, Mani et al. (2013) demonstrated that farmers in India exhibited much worse cognitive performance before the harvest, when they were relatively poor, than after it, when they had more economic resources at their disposal. As they controlled for time, nutrition, and work effort, the authors suggest that poverty-related concerns consume people's mental resources, leaving them with limited abilities to solve daily problems. Given the high levels of poverty in Mexico (37.5%), Colombia (34%), and Peru (33%), the impact of poverty on people's voluntary pension savings should not be underestimated¹³.

Other behavioral biases

In addition to the four biases described above, the academic literature has identified other behavioral biases that may render it difficult for people to make rational and personally beneficial decisions¹⁴. Among them, loss aversion and the abstract nature of savings, compared to the tangible nature of consumption, stand out.

12. With respect to this topic, see Mani et al. (2013) and Mullainathan and Shafir (2013).

13. For the definition of poverty and data utilized, see Stampini et al. (2016). Country-level poverty data from 2013.

14. For a typology and discussion of various behavioral biases, see DellaVigna (2009).

The first bias applies to decision-making under uncertain conditions and refers to the fact that the additional welfare that a gain produces is worth less (in absolute value) than the additional discomfort that results in a loss of an equivalent size (Kahneman and Tversky, 1979). This tendency frequently leads people to demonstrate a preference to maintain the status quo of not saving to avoid, for example, negative consequences of an action with uncertain results. The second bias refers to people's difficulty making decisions that yield abstract benefits, such as savings, when such options must compete with those that have concrete consequences, such as consumption (Akbas et al., 2016; Rabin, 1998).

Lack of education related to personal finance and social security

Decisions about voluntary retirement savings can also be affected by individuals' level of financial education, and their knowledge about retirement savings systems, because the defined contribution and individual capitalization systems are complex and assign many financial decisions to workers. Both types of financial education end up influencing the decision of long-term savings of individuals.

"I'm kind of ignorant about the topic, I'm learning now". (Andres, 30 years old, independent worker. Focus group participant in Chile).

"I know little about the topic and I just save my money, without contributing". (Juan, 36 years old, independent worker. Focus group participant in Peru).

"For my part, not knowing the Colombian pension model makes me not contribute". (Sebastian, 35 years old, independent worker. Focus group participant in Colombia).

Recent studies show that poor math performance of students in upper secondary education engenders a lack of knowledge and financial skills (Villagomez, 2016). As a result, people may make decisions that fail to maximize their individual well-being and, at the aggregate level, this leads to an inefficient allocation of resources in the economy (Lopez, 2017). For example, this may result in suboptimal levels of long-term savings.

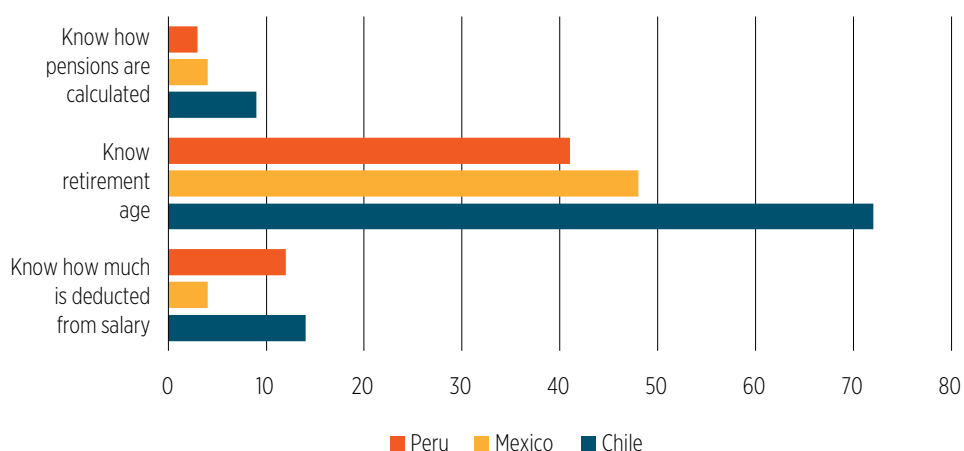
"Regarding data with numbers, above all, and given the general quality of education (...) sometimes what comes out there is really difficult". (Alonso, 45 years old, independent worker. Focus group participant in Chile).

There is a general lack of knowledge about social security systems and how they operate. Figure 12 shows that, although most people know the retirement age in Peru, Mexico, and Chile, they do not know how pensions are calculated or what is deducted from their salary for pension contributions. Specifically, less than 10% of respondents in these countries know how their pension is being calculated. Less than 20% know the amount deducted from their salaries for pension contributions. Bosch et al. (2013) show that this lack of information leads individuals to calculate their own future pensions inaccurately, generating expectations about resources that are, at times, nonexistent, due to insufficient contributions.

(About why not to contribute) *“Why am I going to give money to government entities if I’m still young? I think that 45 years old is a good age to begin contributing”*. (Daniel, 32 years old, independent worker Focus group participant in Colombia).

(About why not to contribute) *“I think there’s wrong information and I prefer to have my money under the mattress because there’s a lack of knowledge about the pension model”*. (Pamela, independent worker. Focus group participant in Colombia).

FIGURE 12. KNOWLEDGE OF SOCIAL SECURITY SYSTEMS IN METROPOLITAN LIMA (2008), MEXICO CITY (2008) AND CHILE (2006)



Source: Bosch et. al. (2013).

Lack of a culture of social security rooted in sociocultural factors

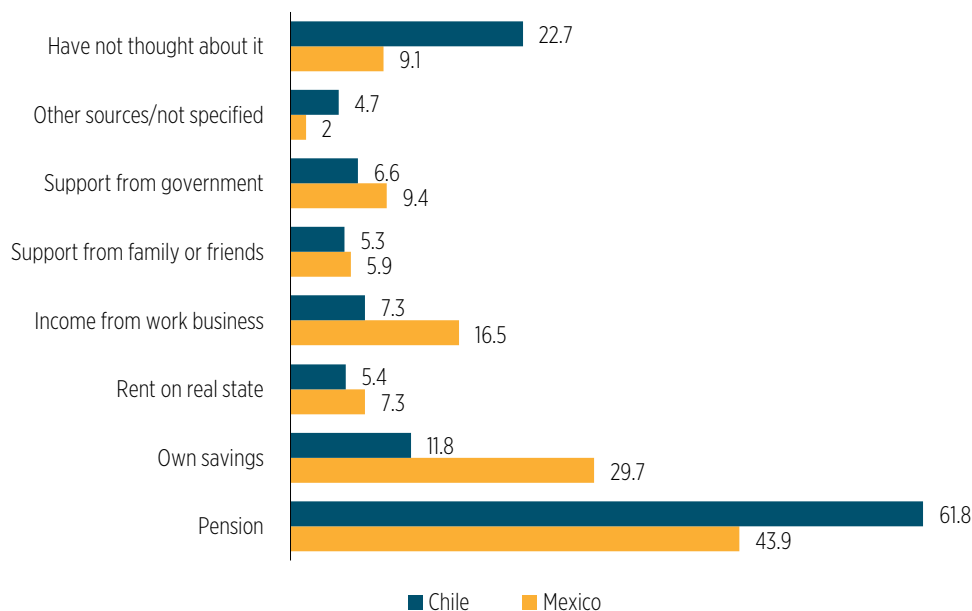
In Chile, Colombia, Mexico, and Peru, sociocultural factors, such as religion, strong intergenerational family ties, and the importance of the extended family, also play an important role in the marginal demand for retirement savings products, particularly in low-income segments. These factors are associated with relying on informal sources of income to cover old-age expenses beyond the concept of retirement (e.g. Mansell Carstens, 1995). Only 44% of those employed in Mexico and 62% in Chile consider fully or partially financing their old age through a contributory pension (INEGI 2015 and *Subsecretaría de Previsión Social* 2015).

(Why she doesn't see a benefit to contribute) *"Of course, because the retirement is so low, I'd rather the municipality give me a pension"*. (Clara, 44 years old, self-employed worker. Focus group participant in Chile).

(How she thinks she will live in old age) *"Resting and getting income from my real estate. I'm saving to invest in real estate"*. (Pamela, 26 years old, self-employed worker. Focus group participant in Colombia).

Financing old age through income or their own business is also among the main strategies mentioned by the interviewees in Mexico and Chile (Figure 13). This may reduce the demand for long-term monetary savings during people's lives, particularly for entrepreneurs, such as small business owners and independent workers, who are more likely to invest in a productive activity rather than commit income to savings. This is consistent with the results of the focus groups carried out by *BancoEstado* in Chile with independent workers, who claim that they prefer to invest in their business, buy land, build or improve a home, or buy a taxi, instead of saving for old age.

FIGURE 13. PLANNED INCOME SOURCE TO FINANCE OLD AGE



Source: Authors' preparation with data from Mexico (INEGI, 2015) and Chile (*Subsecretaría de Previsión Social*, 2015).

In Latin America, the extended family should also be considered as a social security network, with greater liquidity than any pension or formal loan, and with the possibility of responding to unexpected challenges and expenses in shorter terms and with fewer formal requirements (Cavallo and Serebrisky, 2016). For example, only 27% of Chileans who require access to six months of household income in an emergency would go to a bank; on the other hand, 58% would ask family and friends (*Subsecretaría de Previsión Social*, 2015)

As in the hypothetical event of emergencies, during old age, people expect support from their family and friends. Family ties are strong and are associated with intergenerational transfers within the home. Parents invest in the education of their children, and, in some cases, await due monetary compensation during old age. Between 5% and 6% of workers in Mexico and Chile say they expect to live with the help of family and friends during their old age.

In general, low-income families live hand-to-mouth, addressing their immediate needs as they arise. This inhibits the development of a culture of foresight, given that people perceive that, during old age, their needs will be met in the same way, with the help of friends, family, the government, or even God. A sociological study, conducted by AFP Integra in Peru (2017), calls this the “God will provide” effect, which is also reflected in a survey, conducted in 2011, by the Mexican Association of AFOREs (AMAFORE). As can be seen in Figure 13, between 7% and 9% of those employed in Chile and Mexico expect to finance their old age with the government’s help.

IV. Supply-side barriers to voluntary retirement savings

Supply-side barriers refer to barriers that limit the development of long-term savings products that adapt to the needs of vulnerable populations. This includes the lack of commercial incentives for the pension system actors, such as AFPs, AFOREs, and other financial institutions. The different barriers that limit the demand for retirement savings products among independent and low-income workers, mentioned in the previous section, discourage innovation and the entry of other financial institutions offering retirement savings products that are more aligned with the needs of this segment of the population, becoming, in turn, a supply barrier.

Lack of commercial incentives for system-level actors to reach independent and low-income workers

Pension systems' design also represents additional challenges for independent and low-income workers who want to register and make voluntary contributions in Chile, Colombia, Mexico, and Peru. System design provides few commercial incentives for actors, especially AFOREs or AFPs, to orient themselves towards the self-employed and middle- and low-income population¹⁵. In this context, two crucial elements are the business model of the AFOREs or AFPs, which is linked to account holders' retirement fund accumulation, and the structure of individual contribution collection costs. These aspects and how they manifest themselves in the four selected countries are discussed below.

Fees for administering voluntary retirement savings

Fees assessed by AFOREs and AFPs¹⁶ to administer retirement savings constitute the most important source of income for such institutions. Therefore, the way in which these commissions are charged has a strong impact on the structure of commercial incentives faced by institutions when they reach different segments of workers.

15. It is worth noting that these incentives are not independent of these populations.

16. In Chile, in addition to the AFPs, there are other institutions that can offer and administer voluntary retirement savings, as follows: investment fund managers, mutual funds, housing funds, life insurance companies, banks, securities intermediaries and any other entity authorized by the *Superintendencia de Valores y Seguros* (Rubli Kaiser, 2016). In Colombia, trust companies and banks (through their fiduciary departments), can administer retirement and disability pension funds, with prior authorization from the *Superintendencia Financiera*. Among the operations authorized by insurance companies are the Administration of Retirement and Disability Pension Funds, the regime of policies and rates, the regime of technical reserves, and the regime of reserves (Hole, Tuesta and Llanes, 2014).

In general, there are two billing methods: (i) commission “on flow,” and (ii) commission “on balance”. Under the first method, the commission is defined as a percentage of the worker’s taxable monthly compensation. This method, where fees increase on the basis of the affiliated worker’s income, applies to the administration of mandatory retirement savings funds in Chile and Colombia. In the second method, the commission is defined as a percentage of the accumulated balance in the saver’s individual account. This method applies to both mandatory and voluntary retirement savings in Mexico and Peru, and to voluntary retirement savings in Chile and Colombia. In Peru, there is also a mixed commission scheme that applies to mandatory retirement savings¹⁷.

Both methods offer minimal commercial incentive for AFPs and other financial institutions involved in the voluntary retirement savings market to orient their sales toward independent and low-income workers. When charging “on flow,” the institutions’ main objective is to affiliate workers with high and stable incomes. When charging “on balance” of the client’s individual account, the institutions have an interest in promoting voluntary pension savings among those population segments with the capacity to make frequent and substantial contributions. In this case, only independent workers who have this capacity tend to be within the target segment of the providers of voluntary pension savings products.

AFP representatives across the four different countries confirmed, in conversations with the authors, the very marginal commercial value of affiliating independent workers with low resources. Commercial incentives extend to the AFP sales force, which receives a higher commission for affiliating workers with high and stable salaries, or with a substantive balance in their individual accounts.

High collection costs for small contributions

Collection costs represent another disincentive for AFPs and financial institutions to focus on the market of independent and low-income workers. In the countries considered in this document, these institutions tend to incur relatively high costs related to the collection of small retirement savings contributions. There are two models for collecting social security contributions: centralized and decentralized. In “centralized” schemes, regulations stipulate that a single entity -public or private- is responsible for the collection and distribution of social security contributions, including delinquent contributions. In “decentralized” schemes, pension fund administrators have the responsibility to collect contributions, without regulations favoring the use of a specific collection system. This does not preclude the possibility that, in decentralized systems, some pension fund administrators or other private pension system actors

17. In Peru, after the 2012 reform of the Private Pension System (SPP, for its Spanish abbreviation), a transition began, from commissions “on flow” to commissions “on balance”. For all affiliates who registered with the SPP beginning February 1, 2013, individual account fees are based “on balance”. As this balance would have just been created with contributions made as of February 2013, it was established that, over the first 10 years, there would be a mixed commission; that is to say, a component of the commission calculated based on worker’s earnings is added, which, every two years, decreases until it reaches zero. As of February 2023, affiliates using this commission scheme pay only a percentage on the balance of their individual account. Affiliates who entered the SPP before February 1, 2013 were granted the option to choose, until the end of March 2013, between staying in the old commission “on flow”, migrating to the new commission scheme “on balance”, or relying on some mixture thereof.

create or subcontract entities that centralize contribution collection. This model is observed in Chile, for example, where five AFPs created the company *PreviRed*, which allows both companies and private employers, as well as independent workers, to make mandatory and voluntary pension contributions in a simple manner without additional cost.

While there are different arguments for utilizing one collection system or another, the advantage of the centralized model is lower direct and indirect marginal cost (for example, the time it takes an employer to declare and make social security payments) for each contribution, mainly due to the possibility of taking advantage of economies of scale and scope. For example, the centralized model makes it easier to unify collection of social security contributions with that of other social contributions or taxes (Melendez Azcunaga, 2013; Acuña et al., 2015).

Mexico and Peru have centralized pension collection systems. In Mexico, collections are made through a private company that obtains the right to collect and distribute all social security contributions in the country through a public bidding process carried out every 10 years. Currently, the company that serves this role is *Procesar S.A. de C.V.* In Peru, the company *AFPnet* is the current centralizer of workers' contributions to the system. The service, which started in 2007, is offered by the Association of Pension Fund Administrators and allows all employers in Peru to automatically prepare the payment schedules for all AFPs, submit them directly via the Internet, and pay social security contributions. All companies in Peru must declare and pay contributions through this mechanism, but *AFPnet* does not yet facilitate the contribution of independent workers. In Chile and Colombia, the contribution collection systems are decentralized, which implies that the AFPs directly collect their own pension contributions or do so indirectly through contracts with banks or other private institutions within the pension system.

Although there is no systematic and comparable information on the direct and indirect costs of the collection processes of social security contributions in the four countries, dynamics of economies of scale mean that these costs are lower in centralized systems, assuming controls against price fixing and rent-seeking behaviors. In Mexico, *Procesar* charges AFOREs 4 Mexican pesos (\$ 0.47 PPA) for each of the processes in which it intervenes.

The relative significance of the fixed collection cost of each contribution, for the AFPs and AFOREs, tends to grow as the value of the contribution collected declines. As a result, there is little incentive for AFOREs and AFPs to actively promote small deposits on a large scale. At the same time, data from the four countries show that sporadic and low-value voluntary contributions are clearly the most common ways that low-income workers and workers with fluctuating incomes accumulate funds in their retirement accounts. For example, according to CONSAR data, from October 2016 to March 2017, about 50% of voluntary contributions to the pension system through commercial networks had a value of 200 Mexican pesos (\$22.99 PPA dollars) or less, and almost a quarter (22%) were for 50 Mexican pesos (\$5.83 PPA dollars), the minimum value allowed by the Mexican pension savings system (CONSAR, 2017).

Due to the relatively high cost of collecting small contributions, voluntary retirement saving collection networks are concentrated in urban areas where there is a greater number of savers, and are almost non-existent in rural or marginalized areas, where residents have limited incomes. There are also cases in which low-income workers face transaction costs so high that they prevent retirement savings. For example, workers in sparsely populated rural areas must pay high transportation costs to reach metropolitan areas, where infrastructure (collection or deposit offices) is located to make contributions. Although there are already electronic alternatives in many of the countries, which initially allow saving without having to go to a collection or deposit office, scattered rural populations, in many cases, have low educational attainment and limited access to information technologies, so they prefer physical means of payment. Certainly, high transportation costs can prevent savings, especially when saving capacity is low.

Lack of demand becomes a barrier to supply

The different demand-side barriers to retirement savings products for independent and low-income workers, described above, in turn, discourage innovation and the entry of other financial actors, who want to offer retirement savings products to this population segment. This has stymied the industry's efforts to generate retirement savings for independent and low-income workers. Moreover, recent initiatives in Mexico, Colombia, and Peru have had discouraging results.

In Mexico, CONSAR has launched a campaign to increase coverage of the pension system for independent and low-income workers, as well as encourage voluntary savings in AFOREs. Although voluntary savings have increased fivefold in five years, they are still highly concentrated in AFOREs that serve high-income segments of the population. The generation of voluntary savings for low-income segments of the population, in AFOREs, has been very minimal. For example, a counterpart in a Mexican AFORE said that, despite launching a comprehensive campaign with attractive incentives for low-income workers, public participation was very low, and they therefore conclude that this market segment does not want to save voluntarily for retirement. Similarly, other industry stakeholders have sought to encourage direct savings in low-income segments, and have met with little success. Leadership of another AFORE in Mexico indicates that these campaigns have also been unsuccessful, and, of greater concern, most direct debits are canceled within a few months, due to lack of funds in the affiliates' accounts.

In Peru, to encourage the participation of independent workers in the pension system, the government passed Laws 29903 and 30082, which gradually introduced the mandatory contribution of independent workers. Mandatory contributions came into effect in August 2014, beginning with a contribution rate of 5%, which would have reached a maximum contribution rate (13%) as of August 2017. AFP executives in Peru note that, when the law came into effect, some independent workers registered without coercive measures. However, mandatory contributions for independent workers in Peru was a highly

unpopular measure that generated protests and social unrest. Consequently, this law was repealed on September 17, 2014, through Law No. 30237. After the repeal, independent workers who had registered in the AFPs went to the branches to withdraw the money they had previously deposited.

The fate of this initiative highlights the low demand for long-term pension savings products by a large proportion of independent workers in Peru, even when the AFPs have conducted campaigns targeting this segment of the population. For example, the director of an AFP in Peru points out the following: “In 2015 we conducted an attractive and massive media campaign aimed at promoting the savings of independent workers in Peru. After a considerable investment of resources, we got 12 people to save. There is no demand”. Similarly, another director of a Peruvian AFP indicates that “the retirement savings system in the AFPs is not made for independent and low-income workers. You have to find solutions tailored to your needs, like Procter & Gamble has done selling shampoos, soaps, and toothpastes in mini versions. This considers people’s daily reality”.

In Colombia, a long-term savings product has been developed and tailored to independent and low-income workers. In 2013, the decree that created the BEPS program, managed by COLPENSIONES, was approved. The program is a flexible long-term savings mechanism that allows contributions beginning at 5,000 Colombian pesos (\$3.99 PPA dollars), has no administration cost for the end user, incorporates a 20% matching contribution by the state on the total amount saved by the accountholder, and provides incentives for savings that are highly valued by the low-income population, such as life insurance and raffles for houses and motorcycles. At the beginning of 2017, there were almost 700,000 people registered with the program, of which 70,000 had made at least one contribution during the first quarter of 2017. Because the BEPS program is a highly subsidized scheme, there are difficulties with arguing for its replicability by private financial institutions.

V. Contextual factors

In addition to the aforementioned factors, there are contextual factors that contribute to the low levels of voluntary retirement savings in the four countries analyzed. Among them, the existence of noncontributory pensions and the lack of trust in pension institutions stand out.

Noncontributory pensions as a pillar to promote or inhibit retirement savings for low-income people

Latin American countries have had rapid growth in noncontributory pension programs, driven by public pressure to increase old-age protection for the lower income population. However, deficiencies in noncontributory pension designs, such as fragmentation of programs, irregularities in beneficiary standards, inequality, or lack of alignment with the contributory system's pillars, have operated as disincentives for retirement saving among lower income segments.

Bosch et al. (2013) observe that noncontributory benefits may decrease labor market participation and, consequently, participation in contributory pension systems (long-term savings). For the beneficiary of a noncontributory pension, the acquisition of additional income renders the option to participate in the labor market less attractive. This is called the “income effect,” and all noncontributory pensions, regardless of their design, engender this effect to differing degrees, which can lead beneficiaries to reduce their labor supply. The magnitude of this effect depends on eligibility criteria to access this benefit, as well as its amount.

With differences in amounts, coverage, and eligibility criteria, Chile, Colombia, Mexico, and Peru have implemented noncontributory pension programs (Table 3). There are several methods of analyzing the generosity of noncontributory programs to facilitate understanding of their impacts; the authors highlight two such modes of analysis. The first method is to estimate whether the stipend is above the poverty line. The second method is to calculate the replacement rate, which can be obtained by dividing the amount of the noncontributory pension by the average labor income of each income quintile.

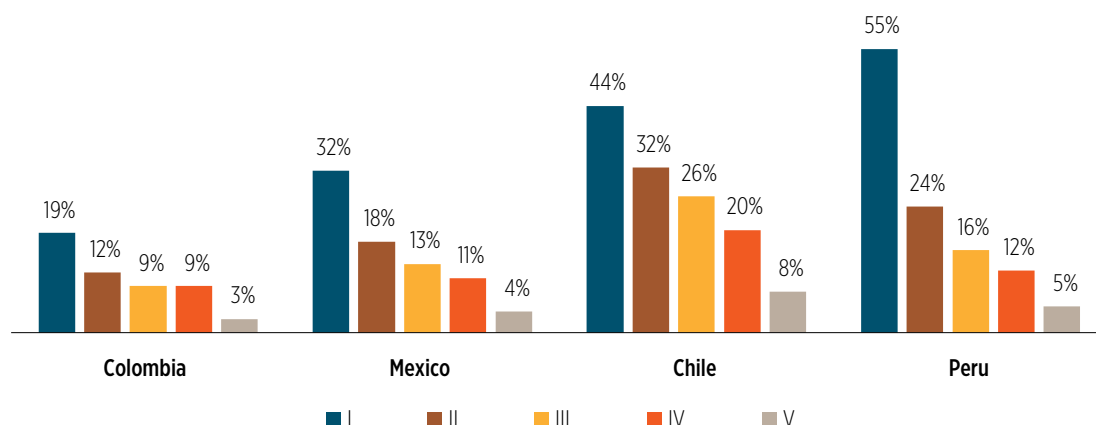
TABLE 3. NONCONTRIBUTORY PENSIONS IN CHILE, MEXICO, PERU, AND COLOMBIA (2016)

Country	Name of noncontributory program	Monthly stipend in PPP dollars	Monthly Benefit related to the poverty line of 3.1 PPP dollars daily	Minimum age to receive stipend	Coordinated with contributory pension
Chile	Basic Solidarity Pension (<i>Pensión Básica Solidaria</i>)	205.6	225.8%	65 (H) 60 (M)	Yes, Pension Superintendence /INP
Colombia	Elderly Colombia (<i>Colombia Mayor</i>)	43.7	43.5%	57 (H) 52 (M)	No, Ministry of Labor
Mexico	Pension Program for Elderly Adults (<i>Programa de Pension para Adultos Mayores</i>)	57.3	57.9%	65	No, Ministry of Social Development
Peru	Pension 65	72.0	71.6%	65	No, Cabinet Presidency

Source: Authors' preparation with data from IPS-Chile, Colombia Mayor, Secretaria de Desarrollo Social Mexico, MIDIS-Peru, Conversion factor of 2016 PPP and poverty line defined by the World Bank.

Only in Chile, as shown in Table 3, does the stipend granted by the Basic Solidarity Pension exceed the poverty line of US \$3.1 per day. By contrast, in Colombia, the stipend granted by *Colombia Mayor* barely covers 43.5% of the distance to the poverty line. Although in Colombia, Mexico, and Peru, the stipends are modest and insufficient to alleviate old-age poverty, they may be considerable financial support for low-income segments, especially when compared with the income received during their working lives. Figure 14 indicates that the noncontributory replacement rate is greater than 15% for the first quintile in all countries, reaching a peak of 55% in Peru. As the level of income increases, the replacement rate falls, so that, in the highest income quintile, it does not exceed 8%.

**FIGURE 14. REPLACEMENT RATE OF NONCONTRIBUTORY PENSION
BY HOUSEHOLD PER CAPITA INCOME QUINTILES**



Source: Authors' preparation with data from Colombia (DANE, 2015), Chile (MDS, 2015), Mexico (INEGI, 2014), and Peru (INEI, 2015). The replacement rate is calculated as the ratio between the average noncontributory pension and the average monetary and nonmonetary labor income of employees, self-employed workers, and employers between 18 and 64 years of age. The household's per capita income quintile is calculated using the total household income for households with income greater than zero.

This does not mean that noncontributory pensions only have negative effects on the labor market. If they align with pension systems' contributory pillars, it is possible to achieve two objectives simultaneously: offer a minimum floor during old age, without discouraging contributions to social security systems. Only in Chile are these pillars aligned, which is reflected in greater pension coverage for independent and low-income workers. The challenge for authorities is to design noncontributory programs that are integrated and complementary to the contributory schemes, to favor the development of contributory schemes in the long term, and to incentivize workers' and employers' contributions. Otherwise, there is a risk of entering into vicious cycle: concerns about pension coverage and old-age poverty may strengthen the appeal of noncontributory programs, thereby discouraging formal employment and participation in the contributory system, reducing the amount of contributory pensions, reinforcing concerns about the level of old-age poverty, and intensifying pressure to expand noncontributory benefits.

Lack of trust in institutions, particularly pension institutions

Throughout the Americas, there is a widespread lack of trust in institutions and the rule of law. This perception has many repercussions on the governmental, social, and financial structural systems; there is minimal willingness to participate in formal systems, be they work-related or financial in nature.

“I think that there is discontent at the national level, No+AFP (No more pension funds) (...) To work for thirty years, and retire with \$120,000 Chilean pesos (\$294.93 PPA dollars) (...) if there were another social security change that gave you higher interest rates, everyone would contribute”. (Diego, 42 years old, independent worker. Focus group participant in Chile).

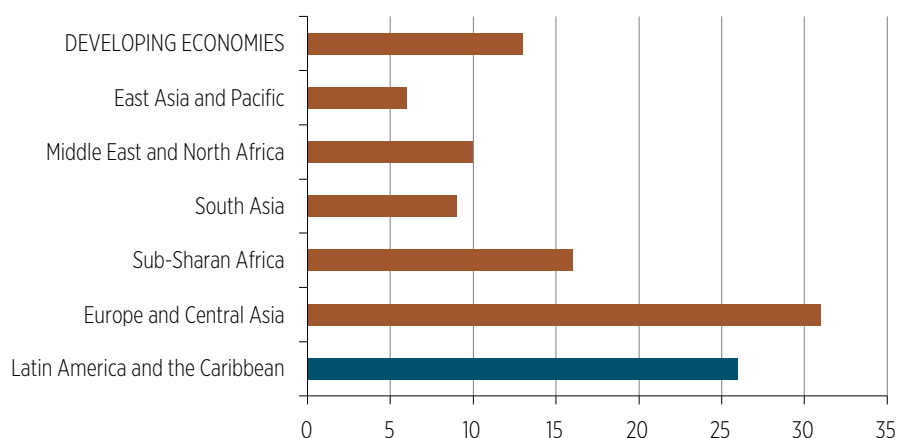
“Because when these funds lose, the pension fund doesn’t lose, only the worker loses. The pension funds never lose”. (Ana, 52 years old, independent worker. Focus group participant in Chile).

“We have lost credibility in this country for everything you hear about, when you hear that everyone steals, you don’t trust anything”. (Monserrat, independent worker. Focus group participant in Colombia).

The lack of institutional trust is reflected in high labor informality, which in turn affects the functioning of the mandatory retirement savings pillar. If workers do not trust social security institutions, or regard saving for retirement as unimportant, they may choose jobs that do not require them to contribute or make it easy to avoid registration. Gomez Sabaini et al. (2014) point out that, in various social security contribution evasion practices, workers accept, even voluntarily, jobs that are not covered by the pension system. In return, employers compensate workers with in-kind benefits, or undeclared payments, or by otherwise reducing the workers’ taxable income.

The lack of trust in financial institutions is also reflected in the low level of voluntary retirement savings. For example, data from the World Bank’s Global Financial Inclusion Database (2014) indicate that 26% of people who do not open a formal savings account in Latin America and the Caribbean decided not to do so because of a lack of confidence in the formal financial system, which makes the region the second most distrustful, globally, as shown in Figure 15.

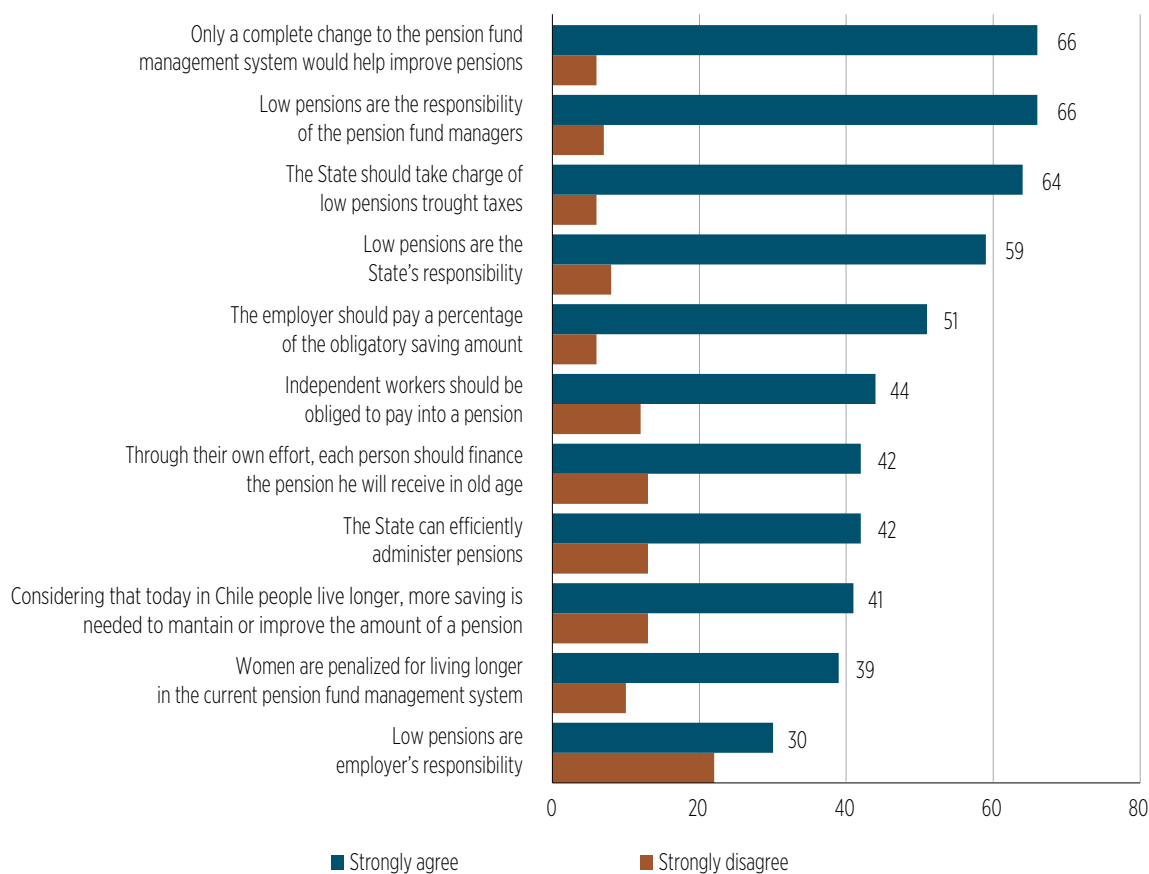
FIGURE 15. LACK OF TRUST AS A BARRIER TO OPENING A FORMAL BANK ACCOUNT



Source: Demirguc-Kunt and Klapper, 2012.

Chile is the country with the most mature individual capitalization account system, although the country is also characterized by a very negative perception of the performance of its pension system and its central actors. According to a recent survey (CEP, 2019) pensions were the second most urgent matter that people felt the government should focus on. Furthermore, the 2015 Social Protection Survey showed that 45% of respondents have no confidence in the pension fund administrators. This may relate to the fact that 70% of the interviewees regard the pensions provided by the AFP system as unable to finance an adequate standard of living. Additionally, as shown in Figure 16, around 66% of interviewees agreed that low pensions were the responsibility of the AFPs and that only a total change to their system would help improve pensions, despite the fact that 59% of people indicated that the state was another actor responsible for low pensions and 64% considered the state to be the actor required to take care of low pensions through taxation.

FIGURE 16. LEVEL OF AGREEMENT ABOUT DIFFERENT ASPECTS OF THE CHILEAN PENSION SYSTEM



Source: Comisión Asesora Presidencial Sobre el Sistema de Pensiones, 2015.

VI. Proposals to mitigate long-term savings barriers

Independent and low-income workers face multiple barriers to saving for retirement in Chile, Colombia, Mexico, and Peru. Some of these barriers can be mitigated with pension and labor market reforms. Others are intrinsic to human nature, but can be mitigated with the help of behavioral economics tools, technological advances, and financial education. Although there is no single solution, it is possible to increase the coverage and adequacy of pensions for the most excluded segments of the population through an appropriate combination of policies.

Labor markets' performance is the main reason for the lack of coverage of social security schemes and low contribution densities, which in turn results in inadequate pensions. Alaimo and others (2015) recommend a comprehensive approach, based on two pillars of general policies. The first pillar includes public policies aimed at increasing and equalizing opportunities to gain access to formal jobs, such as labor intermediation, initiatives to support first jobs, training for adults' labor market insertion or reintegration, unemployment support policies, regulations and reduction of non-salary costs, and supervision. The second pillar includes policies aimed at increasing productive labor stability. This includes regulations for formal dismissal, and training policies for active workers. To the extent that the quality of employment is improved, in terms of formality and productivity, workers' incomes, as well as their ability to save, will also increase.

Pension systems' design can encourage or inhibit retirement savings. Several studies on pension system redesign (Bosch et al., 2013) highlight that, to increase pension system coverage, particularly for independent and low-income workers, the recommended course of action is to structure a multi-pillar system, which includes a noncontributory pillar, a mandatory savings pillar, and a voluntary savings pillar. In this system, the pillars must be complementary and aligned, to avoid distortions. To increase retirement savings of independent workers, it is advisable to move gradually toward mandating their contributions, starting by opening contribution channels that facilitate this group's ability to save. Moreover, systems should facilitate and promote voluntary retirement savings with more flexible fiscal incentives and regulations.

Many of the measures needed to improve the functioning of labor markets and pension systems require legislative reforms and budgetary reallocations. These types of reforms are necessary to increase the number of workers who contribute to the system, as well as total retirement savings and, consequently, the amount of workers' pensions. But, due to this considerable scope, they are complex reforms, with unsurprisingly enormous political costs and, typically, long implementation times.

Behavioral interventions to increase retirement savings

- **Simplify decision-making.** There are many ways to simplify decision-making. Examples include reducing the number of options available, using simple examples of the consequences of each alternative (saving or not saving), specifying comparative examples (benchmarking), and/or giving advice (Iyengar and Kamenica, 2010).
- **Reminders.** Delivery of simple reminders, sent at key moments via text messages or other means of communication, act to focus attention on the act of saving (Karlan et al., 2016).
- **Inform and create a positive mindset.** The means by which relevant information is presented is fundamental, given the problems that people have in paying attention. It is possible to focus attention on saving to make its importance more explicit. Similarly, even before people are notified about saving and must make a decision, they can cultivate a positive attitude toward old age and, therefore, look at voluntary savings more positively (Fertig et al., 2015).
- **Offer present-based incentives.** People tend to regard saving as a sacrifice they must make in the present and, given their impatience, often fail to sufficiently value the future reward. Offering small rewards in the present, such as the possibility of participating in lotteries or highlighting rewards offered by current programs, may increase savings. Replacing lotteries that offer large payments with low probabilities with lotteries with smaller payments and high probabilities is an effective alternative to increase savings, as many people tend to overestimate the probabilities of low occurrence events and feel attracted to larger payments (Volpp et al., 2008).
- **Set deadlines.** Setting deadlines for doing a task prevents delaying the act of saving and breaks from patterns of inertia (Ariely and Wertenbroch, 2002). Given the tendency to procrastinate, individuals frequently fail to achieve their savings goals. Setting deadlines to meet intermediate steps can help counteract procrastination, thereby overcoming this savings barrier.

- **Reduce transaction costs.** Small transaction costs that must be borne in the present may delay actions (Laibson, 1997). For example, expanding savings deposit points and offering automatic payments from a checking account, payroll, or credit card, make it easier to save every time there is a reduction in transaction costs.
- **Pre-commit.** People can commit to saving in the future, for example, by establishing an automatic debit. This mitigates the problems of sustained willpower, as well as prospective feelings of loss in the present, typically engendered by the act of saving. These commitments may vary, in terms of their strength, in the sense that there may be high or low penalties for failing to fulfill the commitment (Karlan et al., 2016; Grinstein-Weiss et al., 2017).
- **Design default options.** The tendency to remain in the status quo can be overcome by designing a predetermined option (a default) that favors saving; for example, an action that must be taken to stop contributing to a savings plan, takes advantage of inertia (Madrian and Shea, 2001; Choi et al., 2004).
- **Offer a mix of assets with different types of liquidity.** Nonliquid assets reduce the temptation to spend in the short term, since liquidating them implies the assumption of transaction costs. That way, those who know they may be tempted to use money today (individuals with present bias) but are aware of that tendency (sophisticated) can turn to traditional savings models to mitigate their problematic willpower (Laibson et al., 1998). However, for the low-income population, having a portion of their savings accessible in case of emergencies increases the attractiveness of these products.
- **Minimize the feeling of loss.** Individuals tend to be more affected by a loss than by the satisfaction they get from an equivalent gain. To counteract this, some programs seek to encourage savings through “rewards,” such as annual increases in income. This happens, for example, in the SMarT plan, by Thaler and Benartzi (2004).

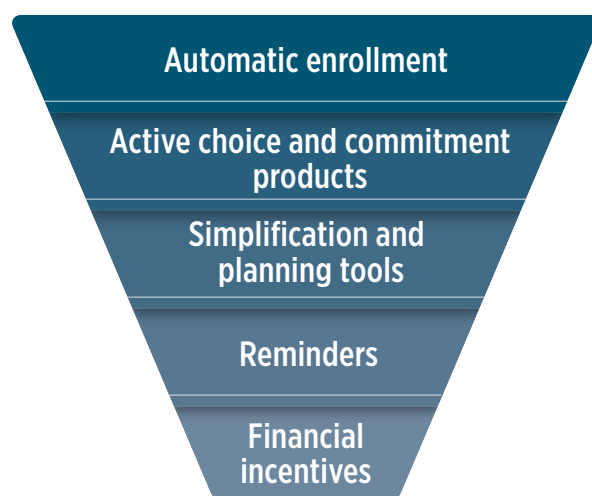
It is possible to design interventions that combine several of these characteristics to increase retirement savings. Among these are:

1. **Introduce automatic enrollment to savings programs.** Automatic enrollment is the introduction of a predetermined savings option that simplifies the act of saving and helps people to pre-commit to saving. These tools usually reduce transaction costs for people by eliminating steps in their saving process.
2. **Promote active choice and commitment mechanisms.** Tools of this type seek to make use of pre-commitment and establish a simple and easily understood scenario for individuals, in such a way that leads them to think about the specific characteristics of their futures, thereby reducing uncertainty and over-optimism.

3. **Simplify.** Starting from the idea that individuals suffer from a limited capacity to process information, simplifying decision-making is a fundamental tool, especially in cases perceived as complex. Simplification also reduces “mental” transaction costs.
4. **Simple Reminders.** Reminders are intended to help keep long-term savings on the list of everyday priorities.
5. **Offer incentives, such as targeted subsidies.** Incentives in the present can help to minimize a sense of loss and, in some cases, provide a combination of liquidity that is more responsive to the needs of independent and low-income workers.

International evidence demonstrates that these tools vary in their level of effectiveness at increasing the number of people who save for retirement and the amount they save (Madrian 2013, Choi 2015). Tools that help people overcome inertia, such as default options favorable to savings, have been shown to be the most effective. Measures that help simplify information and remind people of the importance of saving are moderately effective. Present bias seems to be one of the most difficult behavior biases to overcome. Therefore, measures such as subsidies or matching contributions have more limited effectiveness. The following diagram arranges each of these tools, according to the effectiveness reported in the literature.

**DIAGRAM 2. EFFECTIVENESS OF BEHAVIORAL ECONOMICS TOOLS
TO PROMOTE SAVINGS (FROM MOST TO LEAST)**



Source: Madrian, 2013.

Given that people have myriad behavioral biases, developing strategies that combine several of the aforementioned measures to improve their effectiveness is essential.

It is also important to remember that behavioral economics works in the medium and long term to help people do something that they recognize as important, but that, due to their biases, they do not actually do. For example, if people's inertia is strong and the default saving option is pre-enrollment, people will look for ways to get out of the plan. Therefore, it is important that people are aware of the importance of saving for retirement and the implications of not saving. Financial and social security education can strengthen the effectiveness of behavioral economics measures.

Understanding how savings instruments work and knowing the components of the pension system help build trust in the system, letting people know why it is important that they start saving from their youth, and why they should do it consistently throughout their working life. Implementing such measures makes it easier for individuals to carry out a plan that they recognize as important and likely to increase their well-being.

It is important to note that a fundamental element of all these tools is that they maintain individual freedom of choice. Unlike other public policies, such as mandatory contributions, behavioral tools contemplate the possibility that some people want to save, but do not do so because of their behavioral biases. This way, the tools are useful to help those who see their savings reduced by behavioral barriers, but not for those who confront other types of barriers, such as lack of savings capacity or access to long-term savings products appropriate to their needs.

Technological and financial innovations to increase long-term savings

Financial innovation is another key element to increasing retirement savings. The behavioral tools described require new financial products. For example, a financial service provider that seeks to integrate self-commitment options into its products can generate a savings product that does not allow savings to be withdrawn until a goal proposed by the saver is reached (Nava et al., 2006). Similarly, an automatic savings system designed for an independent and low-income worker can be conditioned on the value of their income, regardless of when this income is received, and prevent withdrawals when balances are very low.

The final element that is key to increase retirement savings is technological innovation, to reach an audience increasingly immersed in a digital world. In 2016, 81 million Mexicans used cell phones, and of those, 74% used smartphones. In this context, technology becomes a fundamental tool to reach people in new ways, at the most appropriate times, with reminders about saving.

Technological innovations also reduce transaction costs, which brings the ability to save into the same space where independent workers charge for their services, consume, or pay public service providers or the state. Bringing long-term savings to people's daily lives opens the door to saving smaller amounts (which often does not occur, due to high transaction costs), which is most suitable to the reality of low-income workers. In addition, technological innovations can help reach regions disconnected from traditional savings systems, by increasing collection networks in a cost-effective way.

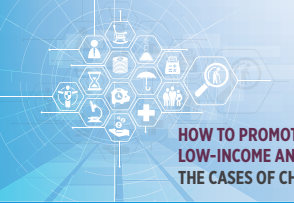
To summarize, behavioral tools, financial innovations, and technological developments offer a set of tools with a high potential to impact the long-term savings of independent and low-income workers. Combining these tools can strengthen them, generating multiplier effects. To reach solutions that can become scalable, financially sustainable, and long-term public policies, technological innovations and behavioral tools have the power to help achieve sufficient retirement savings.

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Appendix 1

Focus group methodology

The methodology followed to conduct the focus groups is described below. First, participants were selected to attend the sessions, and four focus groups were conducted in the capital cities of each country.

Eight people attended each of the focus groups. This number was determined based on best practices identified in the literature. Groups of more than 8-9 participants are difficult to control and limit the opportunity for each person to share his or her impressions and observations. Additionally, group dynamics change when participants want, but are not able, to describe their experiences.

Participants were selected based on the following target group criteria: They had to be low-income workers (belonging to income deciles 3, 4, and 5 of their respective countries), who were independent workers or who had an informal subordinate work relationship at the time of the session.

Specifically, regarding the recruitment process, the normal process has been followed for a qualitative study of this type, and the so-called “same role” has been used.

The sessions were directed to address the following relevant information:

1. General understanding and perception of retirement savings.
2. Causes of low coverage of the pension system in the country.
3. Exploration of possible ways to increase coverage.

In developing the sessions, possible solutions were presented to increase voluntary savings, and additionally, attendees' perceptions, as well as potential behavioral biases were analyzed and identified.

